

MICRO-LEVEL PLANNING- A GEOGRAPHICAL PERSPECTIVE

(A Case Study of Baberu Tahsil in Banda District)

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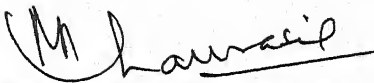


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This is to certify that Sri Pardeshiya Shukla was enrolled for Ph.D. degree of the Bundelkhand University, Jhansi under my supervision on the topic 'Micro Level Planning- A Geographical Perspective (A case study of Baberu Tahsil in Banda district)'. He has worked under my supervision for the period required under ordinance 7 and has been present in the department during that period. Up to the best of my knowledge and belief the thesis embodies the work of the candidate himself. The facts and findings produced in the thesis are original.

I wish him all success.


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P R E F A C E

The planning has been going on since very remote past. At present, to achieve national goals and objectives of development the regional planning has become inevitable. Visualising the economic disparities caused by the macro - level planning. The alternative means and ways are now being explored so that the regional balance as one of the major objective of our national planning may be achieved. All this requires new methods, approaches and techniques of planning.

Starting from a village to a large region the planning process is operated at various area levels. The size of the area or units selected for planning depends upon the geography, history, culture, economy and social structure of the area. That is why the regional planning in our country has taken a multi-level form and it has been found that the lower is the territorial unit or area in planning process the greater is the concern for human welfare.

To achieve the major benefits of regional planning the gross route approach is quite fruitful. The planning process must be centralised and it should operate to the lowest feasible area unit of the nation and the spatial organisation with the help of growth points or service centres must not only be within that unit but also in relation to the central areas.

The micro level planning has become a very successful tool for generating employment opportunities and removing poverty from the marginal people specially in rural areas. At this level the geographical boundaries have got no special meaning. These are the related problems which provide base for the demarcation of planning units at micro level. The training and education for regional planning and peoples participation must be encouraged to make the planning process a success.

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C H A P T E R - O N E

I N T R O D U C T I O N

1.1 CONCEPTUAL BACKGROUND :

(1) Geography and area planning :

Before planning any areal unit of our country. We have to consider the prevailing and tradition bound circumstances. These can be mentioned under the three major considerations. Firstly, there are small land holdings throughout the country which are continuing since very long past. The subsistence farmers who are attached to them for their livelihood must attain sufficiency by farming their land holdings. The alternative of this anomaly is the collective or Co-operative farming. Secondly, the rate of population growth is continuously extending its pressure on employment opportunities. Mostly, this increased population wants its employment in or near his place, which hinders the migration of population from one place to another. Moreover the cost of migration and settling in a new place will be higher than transferring necessary community. Thirdly, split of new technology given by the green revolution, the geographical influence in the shape of crops, soil and rainfall zones is continuing as a dominant factor of agrarian system.

Therefore, we will have to reckon very deeply about the above mentioned population growth, and small land holdings the consideration of the crops, soil and rain fall zones when formulating a plan for economic development at village, block, tahsil or district level. In planning the growth and economic development of our country, we will have to set a directed purpose ful and short cut route of achieving socio-economic targets by fixing priorities

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and preferences :

This short cut route includes a sequence of fractions to solve the prevailing problems in future. The problems of planning may vary from place to place and time to time. But they tend to be primarily economic and social. The time origin of any planning involves a sequence of process, which can be celebrated into three major stages as mentioned below :

- (i) the identification of socio-economic and other problems.
- (ii) the projection of future situations.
- (iii) the generation and evaluation of alternate action and fixation of preferences and priority.

The fixation of preferences, priority and targets depends upon a clear cut assessment of the present economic-base. The availability and augmentation of arrested resources and their possible speed of development. The expected response from national man power and the general, social, political and economic awakening in the region or area is the part and parcel of the economic base¹.

There may be various systems of planning in the different parts of world such as capitalistic, democratic, socialistic, communist and totalitarian which differ from each other in targets, ways of implementation, patterns and techniques as a measure of control in democratic system as now in India. The awakening for planning depends upon the human response and conscious national effort to restrict the correct consumption for accelerating the future production.

Fried Mann² has remarked 'Primarily as a way of thinking about social and economic problems, planning is oriented predominantly towards the future. It is deeply concerned with the relation

of goals to collective decisions, and strives for comprehensiveness in policy and programme. Hilhorst³ 'defined it as the process of decision making that aims at bringing about an optimum combination of activities in a specific area and by which the use of instruments of policy is co-ordinated, given the objectives of the system and the constraints imposed by available resources'. While according to Faludi⁴ the planning is the application of rational methods to the setting of objectives and their translation into public policies and solid action programmes with a vision on future'. For Dror⁵ 'Planning is the process of preparing a set of decisions for action in the future directed at achieving goals by preferable means'.

Generally speaking, the whole concept of planning is mainly concerned with five basic tasks. These are description, explanation, evaluation, prescription and implementation. The description is concerned with the identification, while explanation with cause and effect links among the various activities under taking in society to determine who gets what, where and how. Evaluation involves making judgements on the better alternatives with respect to their contribution to human well being. Prescription implicates ethical question of who should get what, where and aims at spatial reorganization⁶. Implementation concerns with the question of how it is a final process of replacing unfavourable conditions by the favourable ones.

Finally, planning may be defined as a continuous decision making process with the achieving of desirable goals as its aim in providing action plan based on solid theoretical consideration to establish a balance between main and existing resources in a

particular area with a vision on future. The finalization of a planning process depends upon the will power of the society and its nature to solve existing and future problems for this purpose. It includes the thinking of optimal use of resources and their social and distributional justices. When this organized process is implemented over a 'supra-urban region to provide a frame work for integrated or complementary development between different economic sectors and at area levels, it is termed as regional planning. Which according to area level is known as Macro, meso and micro level planning.

(11) Steps of planning :

The aims of developing a model that provides a base to fulfil^{the} needs of an area or a region. According to pepper⁷ each social action begins with problems and ends with problems. The planning has four steps as main said below :

$$P_1 - TT - EE - P_2$$

According to him any system starts with a problem (P_1) to solve this problems a 'tentative theory' (TT) is suggested, this tentative theory is acceded and efforts are made for 'error elimination'^B (EE). After this, the theory is applied to the critical revision of this theory which gives rise to some new problems (P_2).

Specifically the proress of planning comprises five steps i.e. information collection, goal formulation, plan formulation, evaluation and making of decision and lastly its implementation and execution⁹. These steps have been shown in fig. 1.1. The first steps i.e. information- collection provides base to all other steps.

It identifies the present characteristics of study area and indicates trend for future development. This step is a two sided coin, one side of which provides a picture of existing requirements and potentials and hindrances in future development at the other. Adequacy and reliability of available data regarding the study area are of crucial significance. This is the identification of the real world.

The second step of goal formulation reflects the requirement of population at this stage. The participation of public agencies is widely important because this step provides a basic skeleton for the whole planning process. As soon as aims and objectives are finalised many a decision and sub decisions emerge through the course of planning. If these aims and objectives are not obvious and highly conducive the planning process does not solve the desire purpose.

The step of plan formulation' is the link between various policies at this stage. The theoretical aspect is examined so that the aim and objective may properly be achieved. The fourth step is the evaluation and making of the decision. At this stage. There may be many suggestion, to be selected. The correct process of evaluation increases the effectiveness to evaluate various alternative suggestions depends upon their efficiency to satisfy the ambitions of people. No doubt, it eliminate the problems of ever-changing social behaviour at different area levels and dimensions.

The last important step of planning is the 'execution'. It is the form of action to carry out policies, already chalked out very effectly for this purpose. It requires sharp and continuous inspection at the same time this stage modifies the manenvi-

COMMUNICATION CHANNELS & PHASES IN THE PLANNING PROCESS

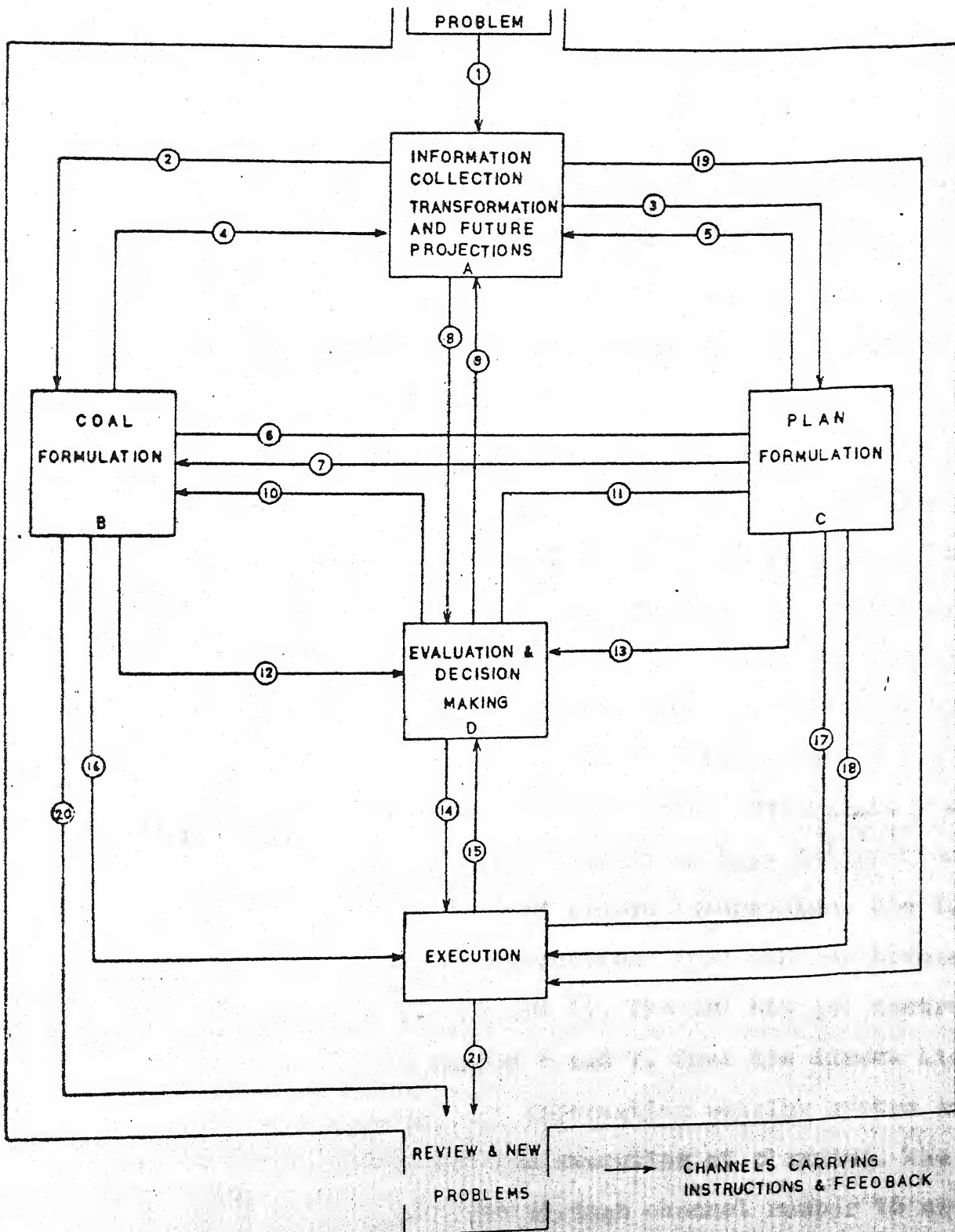


FIG. 1-1

CHANNELS CARRYING INSTRUCTIONS & FEEDBACK

ronment relationship.

After these five steps are completed, the process of assessing is made to know where they are close to reality or not because the planner's work is a probable one, therefore he cannot fore cast the changes coming in the planning process. It provides new ideas which may be incorporated in the next cycle. Review is a process which goes on continuously with the time dimension. The review must be two sided hypothetical as well as refering to new development brought by the change in the order in which the needs and aspirations of people are reflected.

According to Hilhorst the above mentioned five steps of planning process are inter-related by various channels of information inputs and outputs (Fig.1.1). The hypothesis shows the steps planning by boxes and channels of information by continuous lines. The box provides information to second, 3rd and 4th through channels 2,3 and 8, the content 4 of 1 box may be influenced by 2 and 4. Their suggestions received by information channels 4,5 and 9. The 4th box has to make its decisions after evaluating & making proposals coming from 1, 2 and 3 boxes through information channels number 8, 12 and 13 to feed proper information. The 1, 2 and 3 boxes should get proper instructions from 4th box through information channel number 9, 10 and 11. The 3rd box get instruction from 2 through channel number 6 and 7. Thus the direct link among 1,2, 3 and 4 boxes makes the information wearing system and planning process efficient for the execution of planning. The instructions from 4 and 5 box come through channel number 14 and its after effects through channel number 15. The 5th box gets necessary information from 1,2 and 3 boxes through information giving channel number 16,17,19 and suggest deliberate changes to 3rd box. Channel

number 17, 20 and 21 provide information for making a review to assess the effectiveness of all these planning steps depend on the one hand upon the capacity of communication channel and the all other the efficiency of the sub-system inter-connected by these communication these channels.

Finally the author's opinion is that the process of planning is multicyclic. As soon as, one cycle is completed the 2nd cycle starts. After the 2nd 3rd starts on. The results of previous cycle provide base to the next cycle.

(iii) Planning for area development :

During the fifth Five Year Plan a programme of area development was initiated. According to the Fourth Five Year Plan document, "For several years it has been realized that integrated development at the area level is essential for carrying the benefits of development to the more backward sections of the community, for increasing agricultural production and strengthening rural economy. It is on this admonition that street has been led on the preparation of district or block plans. During the Fourth Plan effective co-ordination and administration at the area level will also be of great importance in the context of intensive agricultural development programmes, rural industries project, tribal development programme, regions where major resource development project are being under taken and regions with in the immediate influence of large industries complex". The main objective of these programmes was to provide a concrete and well organized programme for integrated development of the area through active participation of, citizens with the collaboration of official, non-official and valid organization.

During the Fourth Five Year Plan the growing disparities

both regional and social regarding economic development have drawn²¹ the attention of planners. During the Sixth Plan period the distributory aspect of economic process and recognition of smaller areas as planning units were the areas of great concern to pay special attention to the development of tribal society and small and marginal farmers become important is such. These ideas lead the evaluation of target approach and target area approach, which ensured this prosperity of peoples.

During the Fifth Five Year Plan there were two types of area development programmes.

- (1) area based sectoral programmes.
- (2) area plans.

In the first case, the focus is on a particular problem, while in the second case the emphasis has been laid on the comprehensive development of the area. The D.P.A.P. and small and marginal farmers' development programmes are the example of first category. The second category includes tribal and hill area development programme.

After the Fifth Five Year Plan the application of planning process has been emphasized so that the local potentials may be utilized. The previous planning experience shows that the micro level planning decisions exaggerate social economic and physiographic conditions prevailing in the different parts of the country and fill at local level in the recognition of inter-sectoral development and ultimately have led to regional imbalances. To eliminate these problems local planning has been much emphasized during the fifth and sixth five year plans. The planning commission issued some guide lines to prepare district plans which almost all the each states have adopted. The district plan

should be defused between local authorities and government departments.

(iv) Levels of planning :

The planning process may have hierarchical levels integrating state, region, sector, district and area into a national plan. Therefore, our planning process must be surely woven into an intricate but integrated pattern of multilevel planning. However, there are some prerequisites of multi-level planning as given below :

- (1) identification of planning levels with reference to territory space and administration.
- (2) inter-relation between the hierarchy of levels and functions.
- (3) inter-related systems in which technical financial and administrative relationship as well as integration between local state and national plans.
- (4) variability of local and regional planning and execution units.
- (5) accomplishment of local planning and mobilization of local resources and specialization of local potential with the help of government agencies to induce self generating growth¹⁰.

To centralize the planning and decision making machinery the state and district may be suitable levels. Till now, the planning process was systematic character, which had stratified effect on the initiative of the state. The sectoral planning had also some gaps as the absence of spatial planning and co-ordinations at further level i.e. different areas. During the fourth Five Year Plan, ^{the} optimum for identifying financial stage to the state for planning operation was initiating and the extra-expenditure on

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planning was shown by the central and states. Till fifth five year plan the planning machinery was very weak and at the district level it presented a picture of confused programmes operated by different agencies with varying objectives. Therefore, multilevel planning at the districts or sub-districts level calls for over all planning.

There may be other levels for planning purposes such as inter state regions, which can harness available resources, communications and infrastructure in larger national interest. There may be joint district regions as planning units which can compensate the inadequacy of each other below the district level there may be minor areas with special problem and at the grass roots level the village must be treated as a separate planning unit. The frame work of multi level planning has been accepted in principle for national development. Chakraborti¹¹, at the time of Fifth Five Year Plan had suggested a frame work of multi-level planning the main points of which are as follows :

- (1) the planning commission should include the special dimension of economic activity which will have the inclusion of both time and space perspectives.
- (2) Spatial and temporal dimensions should be available to the state for the formulation of there own plans. The states in the light of own plans will indicate what each district should do.
- (3) Inter state authorities should be sent to benefit interior regions. The central plan should be brought out with central ministry and the department concerned.
- (4) an indicate plan should be prepared at central as well as state level for directing the private sector.

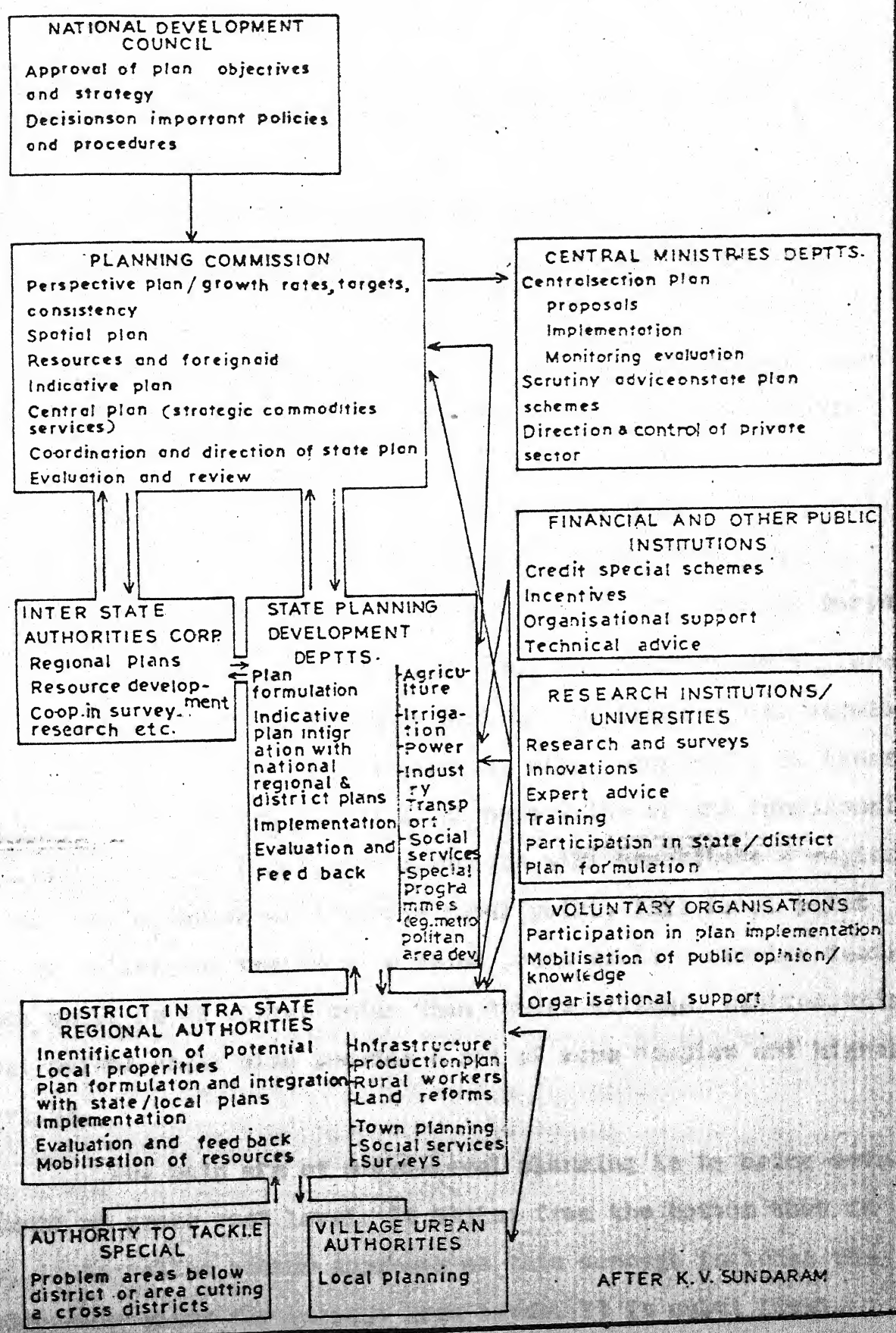
- (5) the multi level plan should be a changeable one till it's satisfactory form is not evolved.
- (6) for the execution of the plan education expertise and machinery at central district and sub-district levels must be provided.

Fig.1.2 represents an organization for a multi-level planning frame work. The figure shows that the organization requires full fledged planning department at state, district, area and local levels. The state planning department will have to pay more attention to information collection, proceeding appraisal and evaluation of programme operating at different levels. The sound planning at local and regional levels carrying a sound and fast development.

(V) The concept of micro level planning :

As discussed previously the planning is the scientific method of multi faceted economic and social development of an area. If we put a question that what is the best method to bring about a scientific and integrated development in our rural areas, the answer will be varied due to varied characteristics of our country. Actually, there is no single method which could be applied to the country with its diverse social conditions. To achieve the goal the, method of planning a small area can be utilized. In a small area the socio economic and physio-Geography conditions are almost homogenous. Therefore, it becomes easier to incorporate the planning process and planning machinery. Thus, the formulation of development plans for micro space, which in our national conditions is an area smaller than district. This technique of development stated that micro level planning has spatial units which are smaller than district or tahsil, development block, Nyaya Panchayat and

A MULTI LEVEL PLANNING ORGANISATION



AFTER K.V. SUNDARAM

FIG-1-2

village. At the bottom each village may be treated as planning unit but due to small population size and major resource base it is too small unit for planning purposes. The development blocks or tahsil on the other hand looks to be of suitable size where location decision and requirement and problems of each village can be discussed and developed effectively.

Thus, to define the actual level of planning is one of the most significant task in Micro-level planning process. Otherwise the term micro-level remains useless. As mentioned above the village is the smallest planning unit. But due to economically unsound condition, it becomes difficult to implement and integrate programme for the closed functionalities. A cluster of a few villages can constitute a functional community. Therefore, Nyaya Panchayat can also be dealt as a optimal unit for planning purpose.

Mostly a central village among the constituent villages of functional community provides some of the higher order services required by the people. These services will necessarily be those which can be supported by the total population of the functional community. If such functional community will constitute a region or sub- region which will have a focal point. This focal point will be called sub region of a focal point or is a service centre which shall be of higher order than centre village. Besides, this focal points shall also provide a set of more complex and higher services.

The main aim of micro-level planning is to bring development at grass root level. It begins from the bottom that is why, it is called bottom approach as this concept includes the development plans for various area level. It is multi level,

multi sector and multi section execution- the village nyaya panchayat, block and tahsil are various area levels for various economic sectors and sections of the Society. The micro level planning must be based on certain fundamental objectives such as to :-

- (1) bring out and avail social and economic- change in the area units.
- (2) resource- public and private co-ordination to provide basic support for any project execution.
- (3) accept necessary, internal motivation, external stimulation and catalytic intervention.
- (4) inter action in wide spread participation of local population in formulation and implementation.
- (5) be connected with other levels of hierarchy for inter action among various levels.
- (6) be an action oriented method.

1.2 REVIEW OF THE PREVIOUS WORK :

The theme of spatial development and planning in our country is new. For this scheme the Western writers have already given the theoretical support. In 1826, Thunen¹² gave the first theory of spatial organization and the mechanism of the diffusion of socio-economic development through space. After one century Christaller¹³ (1933) postulated his classical theory known as 'central place theory' for the location of settlements. In 1940 Losch¹⁴ attempted to provide 'more realistic and flexible theory of economic land scape'. After that Perroux¹⁵ (1955) introduced the well know 'growth pole theory'. In 1957 Myrdal¹⁶ has devised two new terms 'spread effect' and the back wash effect' which

coincide with the 'trickling down effect' and 'polarization effect'.²⁸ Mentioned by Hirsch Man¹⁷ (1958). 'Spread effects' or 'trickling down effects' occur when the growth is diffused outwards from the growth pole. The 'back wash effects' or 'polarization effects' occur when centripetal forces dominate 'centrifugal forces. In 1956, Boudeville¹⁸ contributed his original theory. According to him economic space is tied with the Geographical space through a functional transformation. In 1969, 72 and 75 Herman¹⁹, Hansen²⁰ and Kulinski²¹ also analysed and 'synthesized, various conceptual elements and operational aspects of the theory of development. In 1961 Fried Mann²² recognised that it is the outgoing influence of 'towns and cities' which bring about reorganization of society. In 1967 Hagerstrand²³ contributed the theory of 'spatial diffusion of innovations for economic and social development and transformation. In India, the contributions in the field of spatial development and can be traced. In 1940 Chatterjee²⁴ at first time paid, due attention to make a place for geography in our national planning programme. In 1949 Rao²⁵ and in 1955 Ahmad²⁶ emphasized the significance of regional planning in the context of current national problems. Rao²⁷ (1949^b) stressed the need for re-arrangement of administrative boundaries for planning purposes.

Ahmad²⁸ in 1956 divided India into industrial regions and suggested industrial centres for the national reconstruction. In 1958 P. Sen Gupta²⁹ explained the important factors of 'industrial growth of a region'. In 1958 Wood³⁰ traced the development of regional and urban planning in the country. In 1959 Lear Month³¹ conducted a survey of Mysore state for planning purpose. Till this period the scope of researches was limited. After this period the origin of research in the field of planning was widened and four

major areas of research were taken by the Geographers. These are :

- (i) the studies containing the theoretical and conceptual aspects.
- (ii) the studies related to regionalization for planning purpose.
- (iii) the conducting survey's for planning units; and
- (iv) the case studies of different areas.

In 1969 R.P.Mishra³² explained the concept and techniques of regional planning. He advised the four types of regional level such as macro, meso, micro and local and he traced the coincidence of administrative units as planning regions. He also ascertained the aims and objectives of regional planning. According to him there must be inter-relationship, cohesion and integration and regional self-sufficiency. In 1969 Mishra and Shivlingaiah³³ suggested the strategy of 'growth poles,' centres' and 'points for rural development'. L.S.Bhat³⁴ in his various studies provided a frame-work for planning regions and advocated the centralised regional planning with in the centralised national planning. Pal³⁵ in 1962 studied the level of economic development in south India by using the principle component analysis for the working, the development regions for planning purposes. He also impressed the regional development and operational research techniques for the national planning. In 1963 Rao³⁶ explained the major principles of regional planning. In 1967 Wan Mali³⁷ drew the attention towards the problems between core and periphery problem and advised to integrate the two. In 1968 Fisher³⁸ suggested the comprehensive planning and its execution at the state level.

As regards the regionalization for planning purposes a number of studies have been made for the demarcation of planning

regions. In 1962 L.D. stamp³⁹ remarked "the naturalness in a natural region is fast disappearing because of man's dominant role and the heterogeneous planning regions are taking the place of homogeneous natural regions". In 1960 Rao⁴⁰ Bhat⁴¹ and Nath⁴² suggested a regional frame work for resource development based on the principle of homogeneity. In 1965 P. Sen Gupta⁴³ gave the planning regions for resource development. She divided the country into 7 macro regions and 42 meso regions. In 1963 she again with Sadasyuk⁴⁴ chalked out a scheme of economic regions in India. In the same year the National Atlas Organization and the town and country planning organization gave a scheme of 13 Macro and 36 Meso regions for the planning in India.

The regional surveys for planning purpose were conducted. During sixties the Indian statistical Institute conducted a pilot regional survey of Mysore state⁴⁵ in 1958. The survey highlighted the regional structure and patterns of resource distribution and development problems. In 1962 Macro survey of south India was conducted. In 1962 with the objective of knowing inequalities in the level of development among different regions. At the same time National Council of Applied Economic Research (N.C.A.E.R.)⁴⁷. Conducted a techno-economic survey of all state and selected areas to report to the states. This survey highlighted the spatial pattern of resource utilization and development problems. In 1963 a joint survey made by the Geography departments of Calcutta and Patna Universities and the department of regional planning and architecture and regional planning of the I.I.T. Kharagpur to provide an integrated regional development plan for Damodar Valley region⁴⁸. In this regional study the Socio-economic, land scape alongwith a problems of flood, soil erosion and inadequacies of rural and urban infrastructure were taken.

The case studies related to regional planning and development were made in Calcutta first during 1965-66. The Calcutta Metropolitan development (C.M.P.O.) made the studies of the West Bengal and Calcutta Metropolitan District. Another study was made in the West Bengal regarding Asansol. The Asansol planning organization⁵⁰ during 1966 brought out the 'Interim-Development plan' for Asansol-Durgapur region'. The development plans of this region is the detailed analysis and synthesis of various aspects of the 'socio-economic land scape'. S.L.Kayastha⁵¹ in 1967 studied the variegated issues of the Lahul and Spiti region. Another study made by Pandit⁵² in 1968 is related to the Wardha district in which producers co-operative marketing organizations have been discussed. Lahiri⁵³ in 1968 studied the Haldia region of West Bengal. Whereas Rao⁵⁴ 1969 identified the growth centres and gave a strategy for agricultural region. C.R.Pathak⁵⁵ in 1969 made a study of the Damodar Valley region in detail.

The previous discussion expresses the contribution of various geographers during sixties in the field of planning and development but the real contributions in our country were made during seventies, many commendable scientific works have emerged during seventies and enriched the literature of spatial planning and development. They made systematic theoretical and model studies during these years. Conceptual and case studies require special mention. A.K.Dutt⁵⁶ in 1972 presented a retrospective view of the decades of planning 1951-71. In 1973 L.S. Bhat⁵⁷ discussed a few very important aspects of regional development concept. In 1974 Reddy⁵⁸ discussed the practical problems of regional development policy. He also discussed important features of Multi-level planning. In 1977 A. Mitra⁵⁹ discussed the conditions which affect

the spatial planning of India. Sundaram⁶⁰ in 1977-78 made various studies regarding area development programme. In 1978 Roy⁶¹ discussed the relation between regions and national planning framework. Dutt and Costa⁶² in 1977 analysed the ideological orientations of our national planning. In 1978 R.P. Mishra⁶³ drew the attention towards some basic regional development problems, in a federal system. Nath⁶⁴, Rao and Sundaram⁶⁵, Bhat⁶⁶ and few others have made conceptual study. Mishra, Sundaram and Rao⁶⁸ in 1974 have discussed the validity of the growth pole and the growth centre strategy in Indian context. Narayana and Rao⁶⁹ (1974) and Ram Chandran⁷⁰ (1976) have made their studies regarding the theoretical aspects of regional development and planning. Pathak⁷¹ (1973) discussed the problems of rural development and integrated area development plan. Banerjee and Fisher⁷², Khatu⁷³ and Saha⁷⁴ also made such studies. In 1974 Roy⁷⁵ divided the economic areas in to different zones which reveals certain depressed areas. In the same year Mathur evolved the 'frame work' with in which the 'backward area policy operation in Indian situation was dealt.

After seventies it became an imperative need to bring a well planned development of our national economy. This necessities testing of developed theories and strategies in the field which left for making of field studies. Various research development Institute carried out such case studies. The National Institute of Rural Development located at Hyderabad made many case studies. Wan Mali⁷⁶ (1970) grove an important technique for planning social facilities. Sen took up various case studies. Such as Monograph on 'Miryal Guda Taluka'⁷⁷ and 'Suryapet Taluka'⁷⁸, and presented strong waves for integrated area development studies. He also made a study entitled growth centre in Raichur⁷⁹ in which

he gave a model and a methodology for district planning.

Besides the studies Satya Narayana⁹⁰ in 1972 studied Telengana region with spatial reference to its problems facilities and gave suggested economic development plan of the region. Barthakur⁹¹ (1972) prepared a plan for industrial and regional development of Assam. Sarkar⁹² (1973) studies the problems of Bankura and purulia district of West Bengal with special reference of rural development. In 1974 Shah⁹³ realized the need for micro level planning in the country. In 1976 L.S.Bhat⁹⁴ made studies of 'Karnal area' in Haryana and 'Talala Block' in Gujrat. Other Scholars who made field studies are Mukerjee⁹⁵, Kayastha and Prasad⁹⁶, Reddy⁹⁷, Singh⁹⁸ etc.

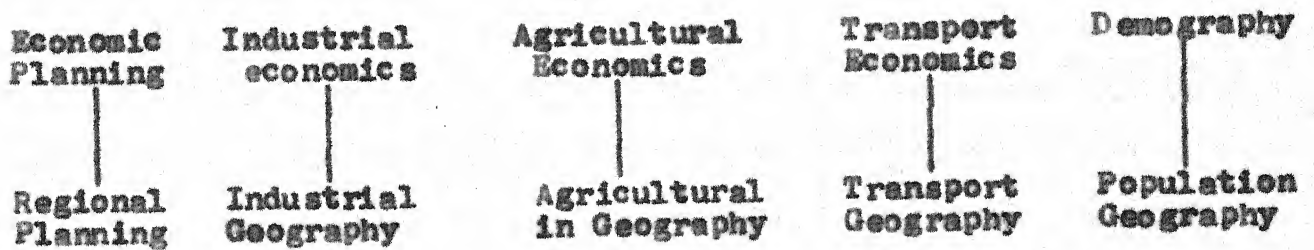
In addition to the above mentioned studies a few more studies regarding different blocks and districts have been made by various agencies Institutions and government agencies which throw light on the methodology of micro level planning. K.V.Sundaram and R.P. Mishra⁹⁹ reviewed all such studies (1980).

From the above description it becomes evident that the decades of sixties and seventies have witnessed the phenomenal growth of research in the field of development and micro level planning. The theories such as the 'central place theory', the 'growth pole theory' and the 'spatial diffusion theory' are the evidence of this growth. Now the planner and the grographers should revise all thise theories and develop a most suitable one for the faster Socio-economic development of the country.

1.3 PARADIGM OF THE THEME :

The paradigm of regional planning in Geography is a few decades old. At the out set in order to understand the birth of

discipline, it would be use full to recognize the most essential feature that which constitutes an inter face geography on the one hand and economics on the other. The following matrix indicate that it has been borrowed from economics.



It is evident that economics is greatly linked with geography. The frontiers of the research which are related to the significance of regional planning for the development^{of a} region big or small are greatly concern^{ed} with the socio-economic and spatial development by providing infra-structure of various useful services like extension services, transport and communication facilities educational, medical and technological service. At the same time the aim of providing these services to one particular area or region is to generate employment opportunities by developing agro-industrial sector in rural areas. The paradigm of regional planning also encompasses the effects of infrastructure on agricultural, industrial and resource- development. The main frontier of research of the regional planning is to make plan as how to utilize rural labour of the farms and maintain a higher rural standard of living and higher degree of mechanization which may be favourable to the development of large rural markets for agro-industrial goods and to the intensification, diversification and specialization in rural areas and the development of employment opportunities in urban areas. The research in regional planning is also concerned with the question "why has same area has become

more developed very rapidly and others only slightly and slowly". It also encircles the question what is the relative importance of market, natural and human resources, transportation, individual initiatives, labour, culture, tradition and some other factors related with the changing effects of time and space. Some new topic of research may be related to find out new possibilities of over development of a backward area. At the same time. We have to maintain the inter-regional relations to continue the flow of resources and raw materials and finished products.

The impact of new technology has created new dimensions for research in the field of regional planning. There are many changes in technology and engineering operations which must have great impact on the economic prospects of a region.

The biggest question of the modern age is the impact of power⁹⁰. The future development of a particular region may be recognized by the use of atomic power and computer technology. So, these two uses open new areas of research for geographers, economist and planners.

1.4 OBJECTIVE AND METHODOLOGY :

Smaller the planning unit greater is the comprehensiveness of the plan for spatial integration. Therefore, Micro level planning has been preferred by the planners and regional scientists in comparison to the macro level planning in which areal disparities remain in many forms. For an efficient organization of planning system, micro-level both external and internal is the present necessity.

In an under developed area the level of socio-economic development is proportionately lower than in the developed areas.

Such areas have promising resource potentiality for socio-economic development but these resources have not been either explored or exploited for industrial and other economic activities. Therefore, the production processes in such areas have been barred. This barrier can be removed through micro-level planning. Micro level planning devices to solve the entire set of problems through the policies and programmes visualizing the real problems ranging from man to man family to family, hamlet to hamlet and village to village. What type of education, land reform, land taxation policy, infrastructure development policy, industrial development policy capital investment policy and social reforms are required, can be judged through micro-planning. The main objective of the study are as follows :

- (i) the study aims to assess the available resources and their use for economic development.
- (ii) it also attempts to evaluate the socio-economic state of the study area.
- (iii) it makes analysis of the present infra-structure facilities and various social and economic services.
- (iv) the study provides a micro-planning for the over all development of the study area by providing a system of service centres.

The study has three phases of its course. The first phase includes the consultation of relevant literature relative with the study for this purpose. The various research centres and the geography departments of various universities have been approached. The second phase is the collection of statistical data and other required informations from the primary and secondary

sources. After that the data has been processed and analysed and the results depicted by maps using, various cartographic and statistical techniques. The third phase comprises of chapterwise thesis writing and finalising of the research project.

1.5 THE STUDY AREA :

(1) Location and extent :

The tahsil Baberu is the northern part of Banda district of Uttar Pradesh. Astronomically it stretches from $25^{\circ}19'N$ latitude to $25^{\circ}43'N$ latitude and $80^{\circ}20'E$ longitude to $81^{\circ}30'E$ longitude. It consists of three development blocks i.e. Baberu, Bisenda and Kamasin. The area is bounded by the Yamuna river in the north, the Bagain river in the east and ^{the} Garara river in the west. In the south it is bounded by the tahsil Naraini of Banda district. In the east lies the tahsil Karwi whereas in the West lies the tahsil Banda. In the north Fatehpur district makes its vicinal boundary (Fig. 1.3).

Geographically it is a small part of trans- Yamuna plain locally known as Banda plain. It covers an area of 1599-09 Sq.Km. Its maximum east west length is 55 Kms. and north south width 43 Kms. Roughly its shape is like an italicised \square square.

Politically it consists of three development blocks, 25 nyaya panchayats, 199 gram sabhas, 211 inhabited villages and 6 uninhabited villages with a total of 217 revenue villages and 3 town areas. The administrative set up has been shown in the following table :

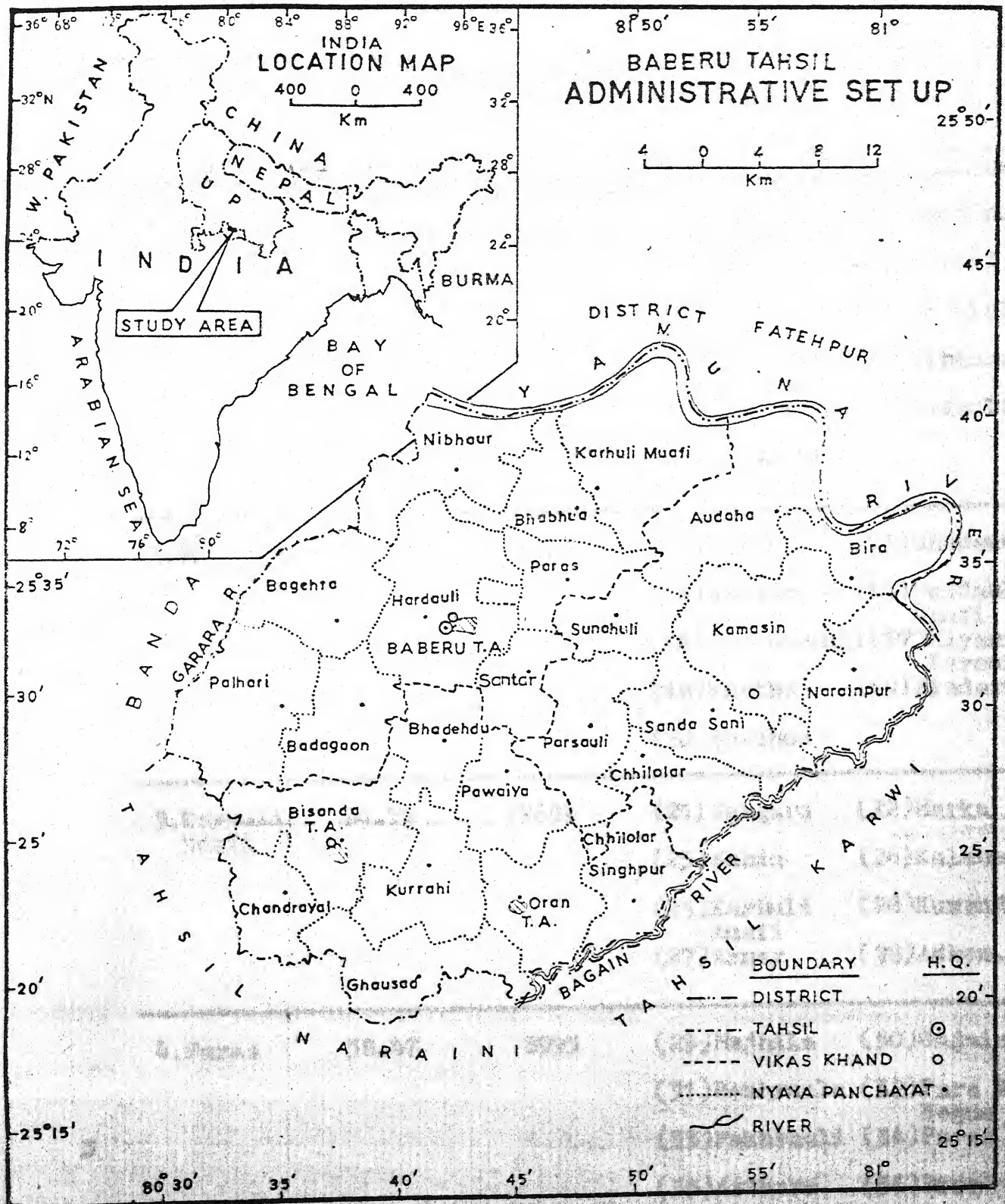


FIG. 1-3

Table 1

(11) Politico-Administrative-Organization of Tahsil Baberu, 1981.

Blocks	Nyaya Panchayat/ Town area	Area in Sq. Km.	Population (1981)	Constituent-villages	
1	2	3	4	5	
B	1. Nibhaur	70.62	13194	(1) Gaura	(2) Jabalpur
				(3) Kabirpur	(4) Augasi
				(5) Jafarpur	(6) Chaktola
				(7) Tola Quazi	(8) Nibhaur
				(9) Majhiwan	(10) Badauli
				(11) Baghaila	
				(12) Bakal	(13) Shamsuddinpur
				(14) Shahpur	(15) Dundauli
				(16) Ban Barauli	(17) Miyan
				(18) Mantha	(19) Pindaran
				(20) Bhabhua	
A	2. Bhabhua	46.30	10699	(21) Sangara	(22) Marka
				(23) Sanda	(24) Kalana
				(25) Karhuli	(26) Kumendha
				(27) Arner	(28) Adhon.
B	3. Karhuli Muafi	94.78	17689	(29) Majhila	(30) Gujaini
				(31) Banhraula	(32) Para Bannu
				(33) Pakhrauli	(34) Paras
				(35) Arthara	(36) Poon
	4. Paras	38.47	8993	(37) Anwan	(38) Umrahani
				(39) Santar	(40) Kuchendu
				(41) Kayal	(42) Rayan

1	2	3	4	5
E	6.Hardauli	91.23	20503	(43) Beunja (44) Bhadwari (45) Patwen (46) Tharthua (47) Gurauli (48) Baberu Sukul Rural (49) Umari (50) Achhah (51) Hardauli (52) Jugrehli
	7.Bagehta	61.25	13646	(53) Saimara (54)Simauni Ghat (55)Amarganj (56)Tola Kalan (57)Bagehta (58)Panderi (59)Anausa (60)Bhatauli (61)Kelhanua (62)Madua (63)Baghanda (64)Ragauli (65)Dewartha (66)Alampur
	8.Palhari	32.97	15782	(67)Rewal (68)Murwal (69)Rampurwa (70)Aliha (71)Mawai Khurd(72)Pasta (73)Para Behari(74)Korari (75)Ghansaus (76)Janwara (77)Palhari
	9.Badagaon	58.64	11254	(78)Ahar (79)Badagaon (80)Melathu (81)Mawai Zunnardar (82)Shive (83)Barauli Azam (84)Nelathu
	U			

1	2	3	4	5
K	10. Audaha	96.17	15976	(85) Arwari (87) Matehana (89) Audaha (91) Mau
				(86) Charka (88) Mudwara (90) Ingua
	11. Bira	46.76	9185	(92) Kheda (94) Kathar (96) Dandau (98) Amendhi
				(93) Barauli (95) Khatan (97) Raghavpur (99) Bira
	12. Narainpur	65.99	12228	(100) Benamau (102) Lakhanpur (104) Narainpur (106) Khamarkha (108) Dhausad (110) Itra (112) Syohat
A				(101) Gaura. Lakhanpur (103) Jorawarpur (105) Amlokhari (107) Acheharil (109) Kuchauli (111) Lohara (113) Budhauni (114) Syohat
	13. Kamasin	96.13	16264	(113) Deorar (115) Masiwan (117) Sikari (119) Kithal (121) Kadohar
				(114) Parnah (116) Bankat (118) Pachhauhan (120) Kumendha Sani (122) Kamasin
	14. Sunahuli	42.41	7831	(123) Satniaon (125) Budhauli (127) Sunahula (129) Andauli
				(124) Bhanti (126) Sunahuli (128) Gurauli (130) Pali.

	1	2	3	4	5
S	15.	Parsauli	64.11	14745	(131) Binwat
					(132) Dataura
					(133) Birraon
					(134) Barauli
I					Mustkha
					(135) Kurra
					Bujurg
					(136) Parsauli
I					(137) Tarayan
					(138) Jamu
I	16.	Sanda Sani	64.66	13620	(139) Kharauli
					(140) Sanda Sani
					(141) Deh
					(142) Tilausa
I					(143) Dhundhui
					(144) Teradarsenda
					(145) Bamhraula
					Sani
I					(146) Andaura
					(147) Lodhaura
					Khurd
					(148) Mankhundi
I					(149) Lakhipur
					(150) Banthari
					(151) Bachhaundha
					Sani
N	17.	Chhilolar	52.63	11283	(153) Chhilolar
					(154) Udaki Muafi
					(155) Bhadaon
					(156) Mawai
N					(157) Mansi
					Khurd
					(158) Digaura
					(159) Chakrehi
B					(160) Bhit
	18.	Bhadehdu	44.65	12123	(161) Korram
					(162) Phuphundi
					(163) Karinga
					(164) Bhadehdu
B					(165) Sathi
					(166) Daftara
					(167) Akona.
I	19.	Bisanda Rural	94.83	12426	(168) Koni
					(169) Umrehda
					(170) Pawai
					(171) Ghoori
I					(172) Bisanda
					Rural
					(173) Lauli
					Tikamau
I					(174) Kairi
					(175) Kurra Khurd
					(176) Saya

1	2	3	4	5
S	20. Chandrayal	46.79	11791	(177) Intra Malauli (179) Chandrayal (181) Pindkhar (183) Khataura (178) Siklodhi (180) Punahur (182) Kusma
A	21. Chausad	64.92	17625	(184) Gadaon (186) Chausad (188) Nandan Mall (185) Ballan (187) Tendura (189) Lanetha
N	22. Kurrahi	54.61	19157	(190) Rasulpur (192) Kurrahi (194) Para (196) Dabhani (191) Bachhaundha (193) Bagha (195) Anwan
D	23. Pawaiya	47.32	12516	(197) Kauhara (199) Belden (201) Jarohara (203) Bhandi (198) Pawaiya (200) Marauli (202) Amlohra
A	24. Oran Rural	55.93	12198	(204) Oran Rural (206) Shhhpur Sani (208) Bhadawal (205) Majhiwan Sani (207) Kullu Koda (209) Beri-Birhandi
	25. Singhpur	73.01	13293	(210) Rachha (212) Palhari Sani (214) Utarwan (216) Itwan (211) Ranipur (213) Singhpur (215) Pahadi Khurd (217) Bilgawan

1	2	3	4	5
T	26. Baberu T.A.	0.51	9695	(219) Baberu T.A.
O	27. Bisanda T.A.	0.36	7199	(219) Bisanda T.A.
W	29. Oran T.A.	0.30	4147	(220) Oran T.A.
N	Total Baberu tahsil	1599.09	353579	(220)

(111) Physiography :

The study area is a segment of the Bundelkhand plain geographically known as Banda plain west. It is ^a plane area with mean sea level height of 231 feet to 429 feet. It can be divided into three small physiographic divisions.

- (a) The northern ravine tract
- (b) The middle plain tract
- (c) The south western higher tract

(a) The northern ravine tract :

It is stretching from west to east along with the Yamuna river. This ravine belt is about 223 Sq.Km. It has also developed along the lower reaches of the Bagain river and the Garara river. It is a narrow belt of bad land topography directed into innumerable gullies. This ravine area is high about 350 feet upto to 400 feet from north to south. It has been badly cut by the seasonal channels, naals, tributaries of the Yamuna river during rains.

(b) The middle plain tract :

It is a rolling plain having its general slope towards

north. It is covered with mar, kabar and parua soils which are more fertile not only the district but also in the whole Bundelkhand region. The Ken canal provides the regular supply of water and generate highest cropping intensity in the whole Bundelkhand region.

(c) The south western higher tract :

It is a triangular area. It is higher than the rest area of the region. Its height varies from 400 feet to 430 feet (Fig.1.4A).

(iv) Geology :

The geological system of the study area is related to the recent deposits which are represented by large scale alluvial deposits. These alluvial deposits are of fluvial and sub-aerial formation of sand, silt and clay. As one proceeds north from south the texture of deposit become more and more refined towards the river Yamuna.

(v) Drainage system :

The study area is drained by the Yamuna system of rivers. The Yamuna is the main river of the study area. The Bagain, Garara and various seasonal nalas known as Kalind, Bharedi, Usra, Trigoria, Matiyara, Rewai, Galgal, Loni, Koel, Surkhi, Baghela, Mohiya, Mohada and Sarwa Nalas. The length of Yamuna river in the study area is 46.66 Km. The Bagain is the second biggest river of the study area which follows for 25 Km. in the study area and confluences with the Yamuna river near Narainpur. Its origin is in Kohari hills of Panna district. Garara river is the biggest of the study area, though it is small and narrow channel but it becomes very furious in rainy season. It follows about 27 Km. in the study area and confluences with the river Yamuna near Augasi. It originates near Gokhiya village in tahsil Naraini (Fig.1.4B).

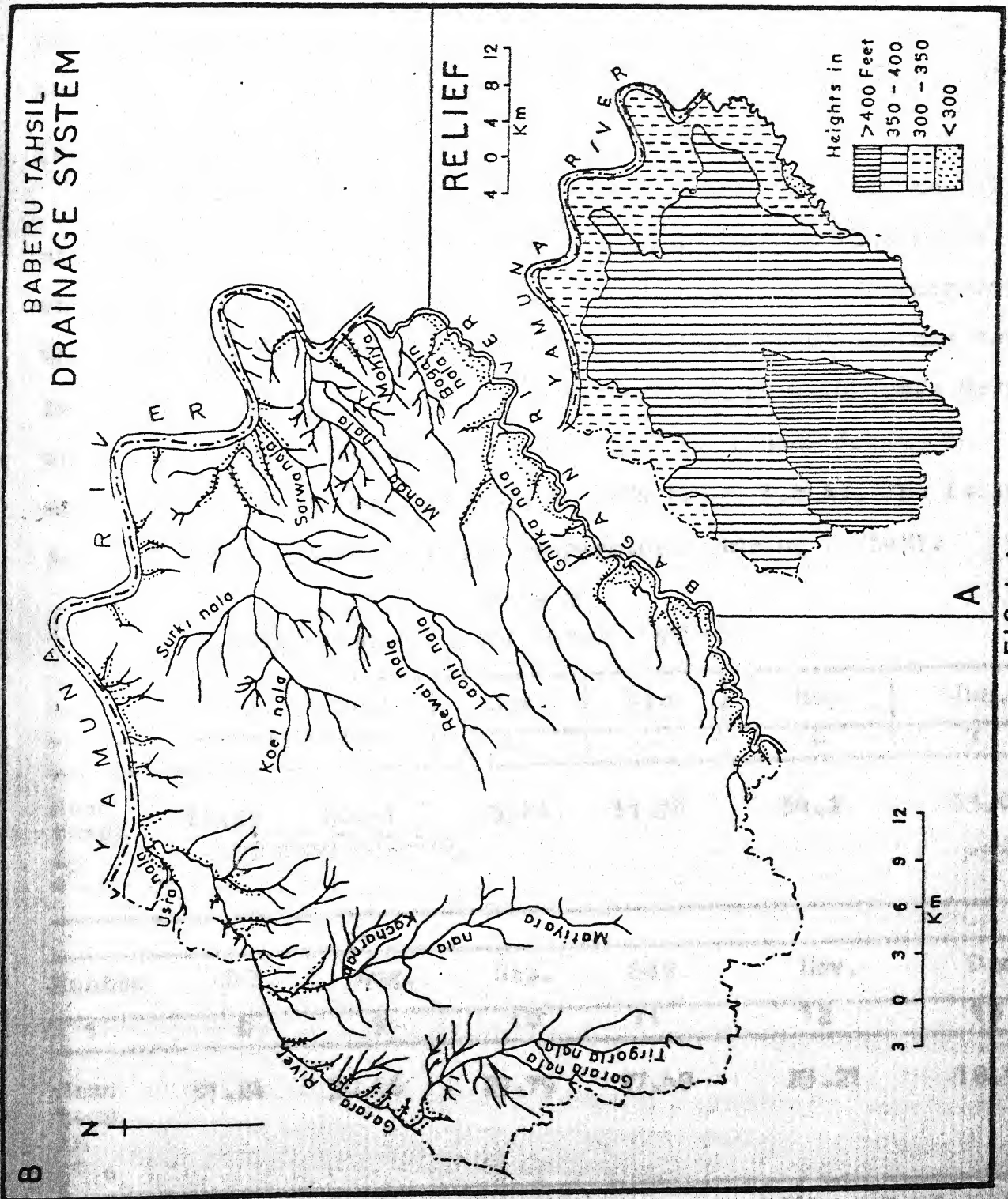


FIG.1.4

(vi) Climate :

The study area experiences the transitional climate between the maritime type of east coast and the tropical continental dry type of the west and falls in Koepen's cwg group.

(a) Temperature :

The average annual temperatures of the area during 1975-81 are uniformly high over 26°C (table 2), but the mean monthly values considerably fluctuate from the annual average. Therefore, the range of mean monthly temperatures are high. The minimum temperature is recorded during the month of January which goes down upto 4.6°C . The maximum temperature is experienced during the month of June which goes as high as 47°C (Fig. 1.5 A). The following table shows average annual temperatures during 1975-81.

Table 2
Average annual temperatures, 1975-81.

Months	Jan.	Feb.	Mar.	Apr.	May	Jun.
1	2	3	4	5	6	7
Mean temp. in $^{\circ}\text{C}$	17.23	20.51	25.44	31.36	34.2	35.05

Months	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	8	9	10	11	12	13
Mean temp. in $^{\circ}\text{C}$	31.24	30.16	29.79	27.49	23.21	18.90

Source : Data collected from the Collectorate Office, Banda.

(b) Rain fall :

The average annual precipitation (from 1975-81, table 3)

varies from 35.29 cm. to 120.5 cm. most of the annual rainfall is received from June to September. During the month of January some shallow depressions cause winter rain fall. From April to 15 June the season remains dry with high temperature during May and June. Scorching winds blow. They are locally known as 'loo' and are the remarkable feature of the season. The day temperatures are very high but the nights are comfortable. The summer monsoon arrives to the area during the third week of June and temperatures fall very abruptly. This fall in temperature gives a general relief (Fig. 1.5 B). The following table shows average rain fall during 1975-81.

Table 3
Average annual rain fall, 1975-81.

Months	Jan.	Feb.	Mar.	Apr.	May	Jun.
1	2	3	4	5	6	7
Total rain-fall in Cm.	8.8	8.34	8.46	1.62	3.08	120.4

Months	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	8	9	10	11	12	13
Total rain-fall in Cm.	274.45	368.07	96.58	16.77	8.81	9.34

Source : Rain fall data collected from tahsil headquarter, Baberu.

(vii) Vegetation :

The vegetation of the study area falls under the category of deciduous monsoon type. The common trees of the area are Mango, Mahua, Jamun, Neem, Amala, Sahjan, Ingohata, Karel, Khair, Palmyra, script; and Grasses also growth in the study area

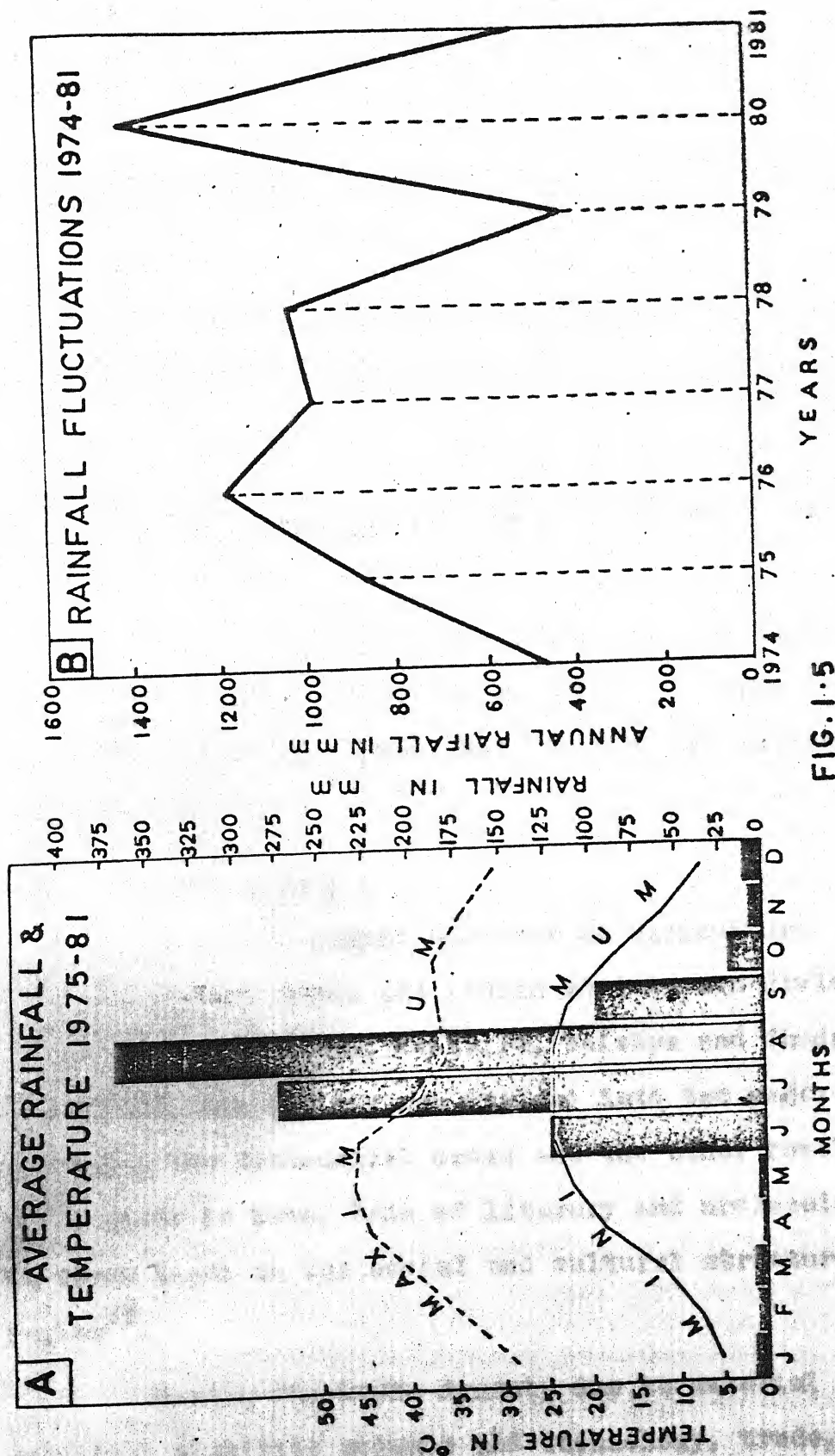


FIG. 1.5

mainly during the rainy season. The important grasses Musel, Gunna, Pasai, Kans, Wandal, Bhanwar and various other fodder grasses are found in the study area. The expansion of cultivation has removed the forested and grass land from the ~~pink~~ plain parts of the area.

(viii) Fauna :

The main ~~wild~~ animals in the study area are Jackals, Foxes, Deers, Monkeys and Hyaena found along the Yamuna bank. Some other minor animals like squirrel, Parcupine, Rabbits, cats, Rats, etc. are also found.

The main birds in the study area are peacock, Peahen, Crane, Owl, Pigeon, Wood- Pecker, Crow, Vulture, Part ridge, Magpie, Kite, Cuckoo, Dove, Bat, Papiha and various other birds of minor type.

(ix) Cultural setting :

The study region has been an agricultural area since long past. In ancient times the Indian society was divided into four varnas that is Brahmin, Ksh^atriya, Vaishya and Shudra⁹¹. During the Mauryanera, the society was divided into two major divisions - one following the Brahmanical order and the other revolting against it⁹². There is total lack of literary and archaeological evidences to throw light on the social and cultural structure of the study region⁹³.

During the Gupta dynasty due to material prosperity and political stability science and technology, trade, industry, indigenous arts and crafts grew as trade and that is why a few specialized guilds developed in the society which later on, gave rise to multi caste society due to matrimonial relations within the same

guild. This caste system continues till recent times which is still social order of the study region.

The region has been rich enough in agricultural produce produce like rice, wheat, barley, pulses and oil seeds. The wheat and boiled rice were the favourite food of the region. The milk, curd, butter, ghee were commonly used. Sattu was the common breakfast which is still continued. It was made of gram and barley⁹⁴.

Since long 'dhoti' and 'Uttariya' were common dress of gaints. Turban was also in practice. Dhoti and Sari was the common clothing of ladies, Some time ladies used Ordhani. Ladies had long hair palaited into one or two long braids or they tied as a big knot. From the records of Gupta period, it is evident that both men and women were fond of beautiful long and soft hair. Ladies were highly fond of ornaments^{like} rings, benda, arnelets, mekhala, bangles and girdles etc. The art of Jewellery progressed during the Guptaera as mentioned by Curringham⁹⁵. The art popularly known as Godana, is still in practice.

People since ancient times have been living mostly in kachcha houses. The general plans of houses consisted of a central courtyard enclosed by rooms on the four sides⁹⁵. The roofs were thatched. Some time people constructed two storey houses. As regards the means of transport, the bullock-cart was very common. Boats were also used in river transport. Horses and horse carts were also used. Dancing, archery, hunting, ran fighting, gambling and restling were the means of amusement in ancient times many of which are still in practice.

The history of education system in the study area is very much queer. Due to lack of literary and archaeological evidences

it can be suggested that 'Gurukul system' was also in practice where philosophy, vedic literature, logic, grammar, law, ethics, theology, mathematics, hippology, astrology, astronomy, chemistry, medical and other sciences were taught. Hindu temples and Moslem mosques have also been giving education during the middle period. At present the study region has many educational centres of modern types but is lacking in higher educational centres.

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CHAPTER - TWO

AVAILABILITY AND POTENTIALITY OF RESOURCES

RAMIFICATION OF EXISTING RESOURCES :

E.W. Zimmerman¹ has defined the resource as a means to achieve desired ends. 'Thus, the word resource does not mean a thing or a substance but a function which a thing may perform. The nature given resources such as soil, water, forests, minerals and others are called natural resources and the man made resources are called cultural resources.

The development of resources has been pointed out in four stages².

- (i) Initial Scarcity
- (ii) Abundance
- (iii) Changing abundance; and
- (iv) Again Scarcity

The stage of scarcity Prevails mostly due to the lack of technical knowledge to utilized the resources. The phase of abundance continues in a region due to lack consumption. The stage of changing abundance is marked with the technical advancement of a region.

In the above light the area under study is experiencing the third stages which symbolises the dawning of technical development and utilisation of primary resources such as the land, field, forest and live stock to process and convert them into useful commodities. The resources can be categorised as under :-

2.1 VEGETATIVE RESOURCES :

(A) Agricultural resources :

Agriculture is the back bone of the economy of Baberu tahsil. In 1991 this sector employed about 91.99 % of total working population of tahsil Baberu. This heavy dependence on agricultural sector is the indicative of the fact that all other sectors are comparatively less developed. Though about 79.93 % of the total geographical area is nett

cropped, yet the tahsil Baberu is agriculturally under developed as symbolized by traditional and rudimentary methods of cultivation oriented mainly to the production of cereals. Other reasons of this backwardness are unfavourable geographical conditions such as inadequacy of rainfall and irrigation facilities, soil erosion in the ravine areas of the Yamuna, Bagain and Garara rivers the saline and alkaline soils and water logging³.

General land use :

J.L.Buck has rightly stated "The amount of land and its quality, the intensity of its uses for plants and animals and the degree to which it is modified by man to increase its production are all essential in the consideration of land utilization in any country⁴. In the foregoing analysis all these factors have been dealt in.

The analysis of the general land use of the tahsil Baberu has been given in the following table¹ & Appendix II-1.

Table 1
Major Uses of Land in Tahsil Baberu (1982-83)

Sl. No.	Uses	Percent of total Geographical area	Area in Hectares
1	2	3	4
1.	Nett cropped area	79.35	126939
2.	Fallow land	4.55	7234
3.	Cultivable waste	4.69	7429
4.	Permanent Pastures	0.03	39
5.	Forests including Groves and trees	0.67	1072
6.	Barren and uncultivable waste	5.52	8777
7.	Land Put to non-agricultural uses	4.70	7469
Total		100.00	158909

Source : Tahsil head quarter, Baberu, Distt. Banda.

importance in tahsil Baberu. The double cropped area shows a very little percentage. It is 23.42 % of the nett cropped area of the tahsil Baberu. The main reason for the same is the insufficient rainfall and inadequate irrigation facilities available in the area.

Cropping Pattern :

Cropping pattern shows the proportion of area under different crops at a particular period of time. In tahsil Baberu the food crops like wheat, paddy, jowar, bajra, barley and pulses are dominant which cover about (121.40 %) of the nett cropped area. A very little area of 1.55 % is under oil seeds and 0.22 % is under commercial crops like sugarcane, potato, tobacco, groundnut and hemp etc.

Cropping Intensity :

The cropping intensity in tahsil Baberu shows the quantity of land being utilised for growing variety of crops. The percentage of cropping intensity (C.I.) has been calculated with the help of following formula :

$$C.I. = \frac{G.C.}{N.C.} \times 100$$

Where, C.I. = Cropping intensity

G.C. = Gross cropped area

N.C. = Nett cropped area

$$C.I. = \frac{156613}{126899} \times 100$$

$$= 123.425 \%$$

In 1982-83 the cropping intensity was 123.425 % in tahsil Baberu.

Distribution and production of main crops :

A number of crops are grown in the tahsil Baberu, but only a few of them are important for acreage as well as production. The food crops have a direct bearing on the productive land where as the

crops of commercial and industrial importance lag behind. Rice, wheat, gram, jowar, pulses, bajra, barley and oil seeds are important commercial crops of the study area. Other crops of lesser importance are sanai, sugarcane, tobacco and potato. The appendix II 3-6 and Fig. 2.1 A-D, 2.2 A-D, 2.3 A-D and 2.4 A-D, 2.5 A-F, 2.6 A-F depict the area and production of these crops.

Rice (*Oryza Sativa*) :

Rice is widely produced in the tahsil Baberu with the irrigation from Ken Canal and its branches. This tahsil has become the "Rice Bowl" of the Bundelkhand Region. During the year 1982-83 the area under rice crop was 23.08 % of the nett cropped which was 14.85 % and was follow^{ed} by Baberu (14.48 %) and Kamasin (13.73 %) Blocks respectively (See Fig. 2.3 A). There are two types of crops.

(1) Autumn crop

(2) Winter crop

Autumn crop is harvested in the months of September-October and Winter crop is harvested in December-January. The production of paddy during 1982-83 was 22758 metric tonnes which accounted for 27.50 % of the total food grain production in the study area. The per hectare production of paddy is 776.90 Kgs. in the tahsil Baberu. The main varieties grown in this area are Tulsi Bhog, Parsan Badshah, Chinnawar, Gur Matia, Babadhan, Saket 4, IR 8, and IR 24 etc. (Fig. 2.4A) The area and production of paddy exhibit a positive co-relationship ($y = 1.72 + 0.77 X$ & $r = 0.99$ Fig. no. 2.5 B).

Wheat (*Triticum-Sativum*) :

Both old and new varieties of wheat are produced in the study area. Kathia and pisi the two local varieties grown in the block soil without irrigation and in clay and loamy soils with irrigation. Due to the introduction of high yielding variety of wheat, the area under local varieties is decreasing. The high yielding

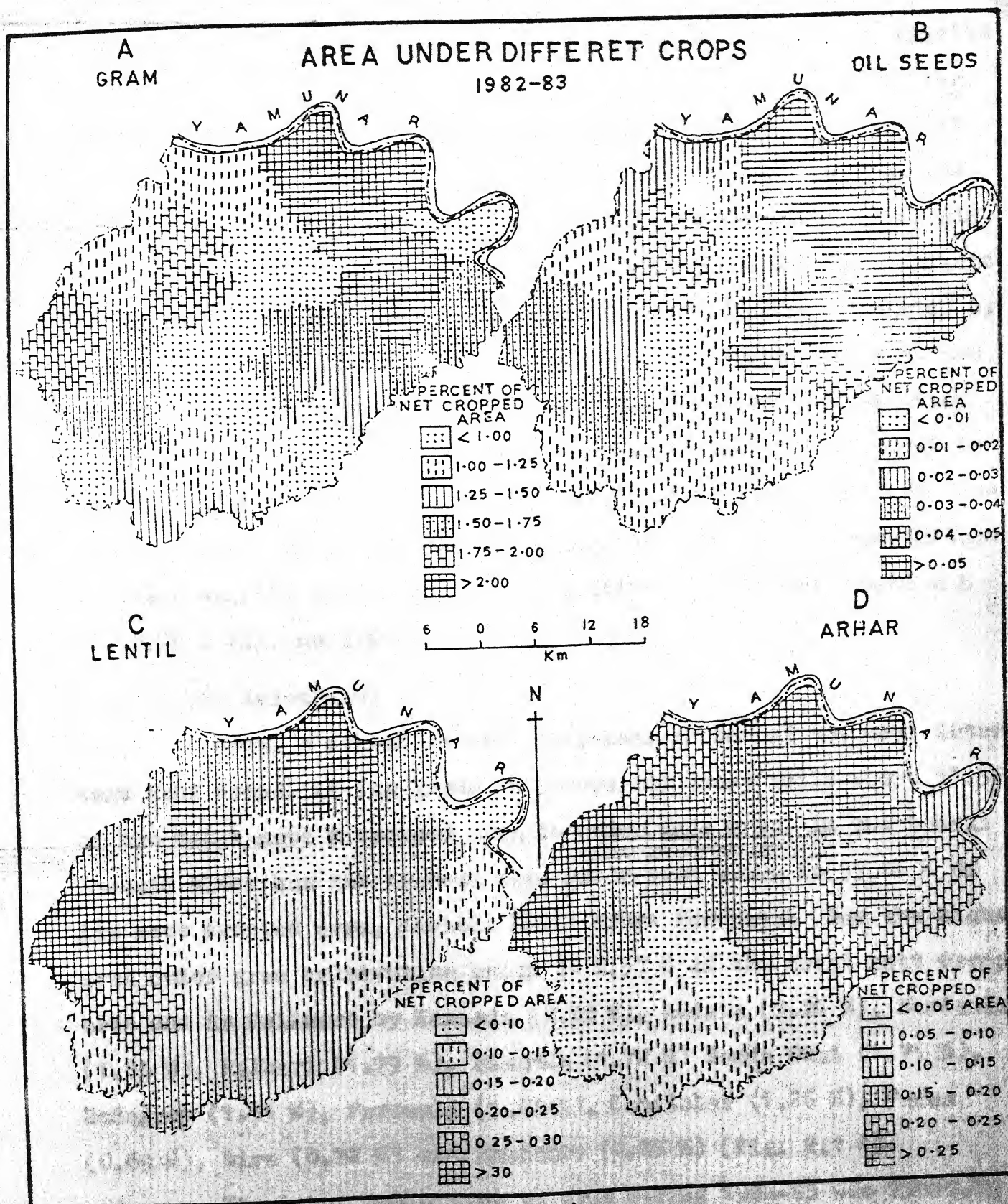


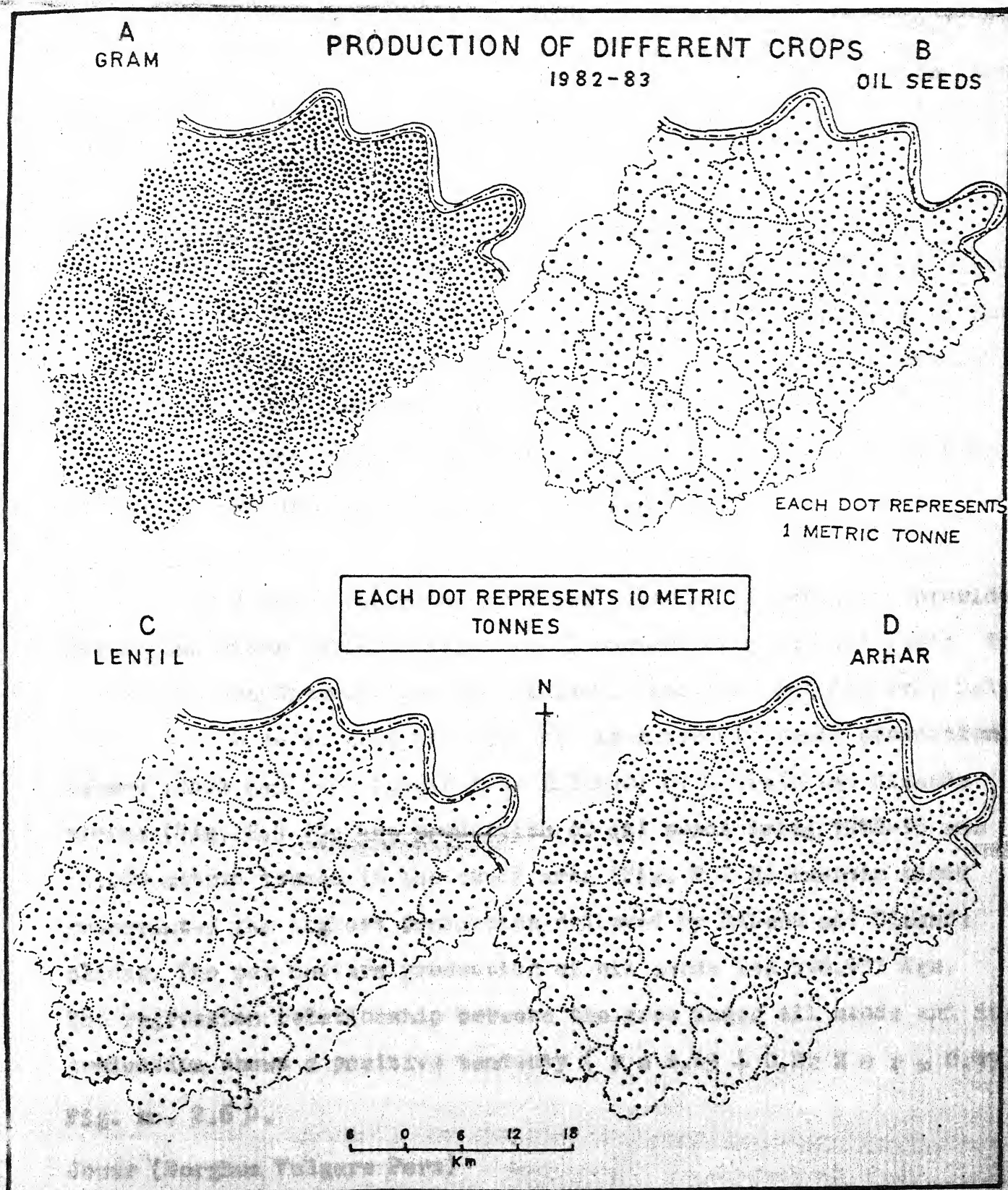
FIG. 2.1

variety popular in the tahsil are K-68, R.R.21, K.13 etc. Sonari 64 and Iarna Rajo are the maxican varieties are grown in the irrigated areas. The area under this crop during 1982-83 was 38.45 % of the nett cropped area. The Bisanda block (49.17 %) showed the highest percentage in the study area under this crop. The lowest area was recorded by Baberu block (35.50 %) and Kamasin block ^{respectively} (30.48 %, fig. 2.3 C). The production of wheat during 1982-83 was 42,281.00 Metric tonnes in the tahsil Baberu. The highest production was recorded by Bisanda block (41.24 %) which was followed by Baberu (34.12 %) and Kamasin (24.63 %) blocks respectively. The per hectare production of wheat in the study area was 966.48 Kgs. As the most of wheat is produced as a second crop on the paddy fields, the per hectare production is not up to the mark (Fig. 2.4 B). The area and production of wheat exhibit positive co-relationship ($y = 0.0089 + 0.96 X$ & $r = 0.99$) Fig. no.2.6 B.

Gram (Cicer Arietinum) :

Gram, a cereal as well as pulse, is one of the most important Rabi crops. It is grown in paruwa and loamy soils about 33.55 % of the total nett & cropped area is under this crop. In the tahsil Kamasin block has the highest area under gram which is 37.24 % of its nett cropped area. Karhuli Muafi Nyaya Panchayat has the highest area under gram cultivation which is 2.57 % of the total nett cropped area and is followed by Kamasin (2.29 %), Audaha (2.24 %), Hardauli (1.85 %), Palhari (1.79 %), Bisanda (1.72 %) Senda Sani (1.71 %), Badagaon (1.51 %), Parsauli (1.68 %), Chhilolar (1.26 %), Paras (0.69 %), Bira (0.82 %) and Bhadehdu (0.83 %) (fig. 2.1 A).

The total production of gram during 1982-83 was 23960.00 Metric tonnes. Karhuli (1854.00 Metric tonnes) and Kamasin (1593.00 Metric tonnes) Nyaya Panchayats produced the Maximum quantity of gram. Paras (501.00 Metric tonnes), Sunahuli (542.00 Metric tonnes)



EIG. 2.2

and Bhadehdu (615.00 Metric tonnes) represented the minimum production. The per hectare production of gram in the tahsil Baberu is 562.74 Kgs. (Fig. 2.2 A). The regression relationship between the area under gram and its production shows a negative tendency ($y = 21.70 + 0.55 X$ & $r = 0.47$) Fig. no.2.5 A.

Pulses :

The main pulse crops of the tahsil Baberu are Maseer, Arhar, Urd, Peas etc. They cover 44.35 % of the total nett cropped area in the tahsil Baberu, Kamasin and Bisanda Blocks have the first second and third places as regards the pulse area.

The production of pulses during 1982-83 was 56256.00 Metric tonnes and per hectare production was 676.22 Kgs.

Oil Seeds :

Oil seeds refer to all those seeds of plants which provide edible and other valuable oils. The important crops of oil seeds in the tahsil are Sesamum, Castor, Linseed, Rape seed and Mustard. Only 1.13 % of the total nett cropped area is under oil seeds production. Baberu block has the highest area followed by Kamasin and Bisanda blocks (Fig. 2.1 B). The production of oil seeds during 1982-83 was 441.00 metric tonnes in the study area (Fig. 2.2 B) Kamasin block represented the highest production followed by Baberu and Bisanda blocks. The per hectare production of oil seeds was 306.037 Kgs. The regression relationship between the area under oil seeds and its production shows a positive tendency ($y = 4.43 + 0.22 X$ & $r = 0.95$) Fig. no. 2.6 D.

Jowar (Sorghum Vulgare Pers)

Jowar is one of the chief Kharif crops which is sown in July and harvested in November. It covers about 12.98 % of the total nett cropped area in the tahsil. Baberu block covers 5.93 % area under Jowar which is the highest area followed by Kamasin and Bisanda blocks with

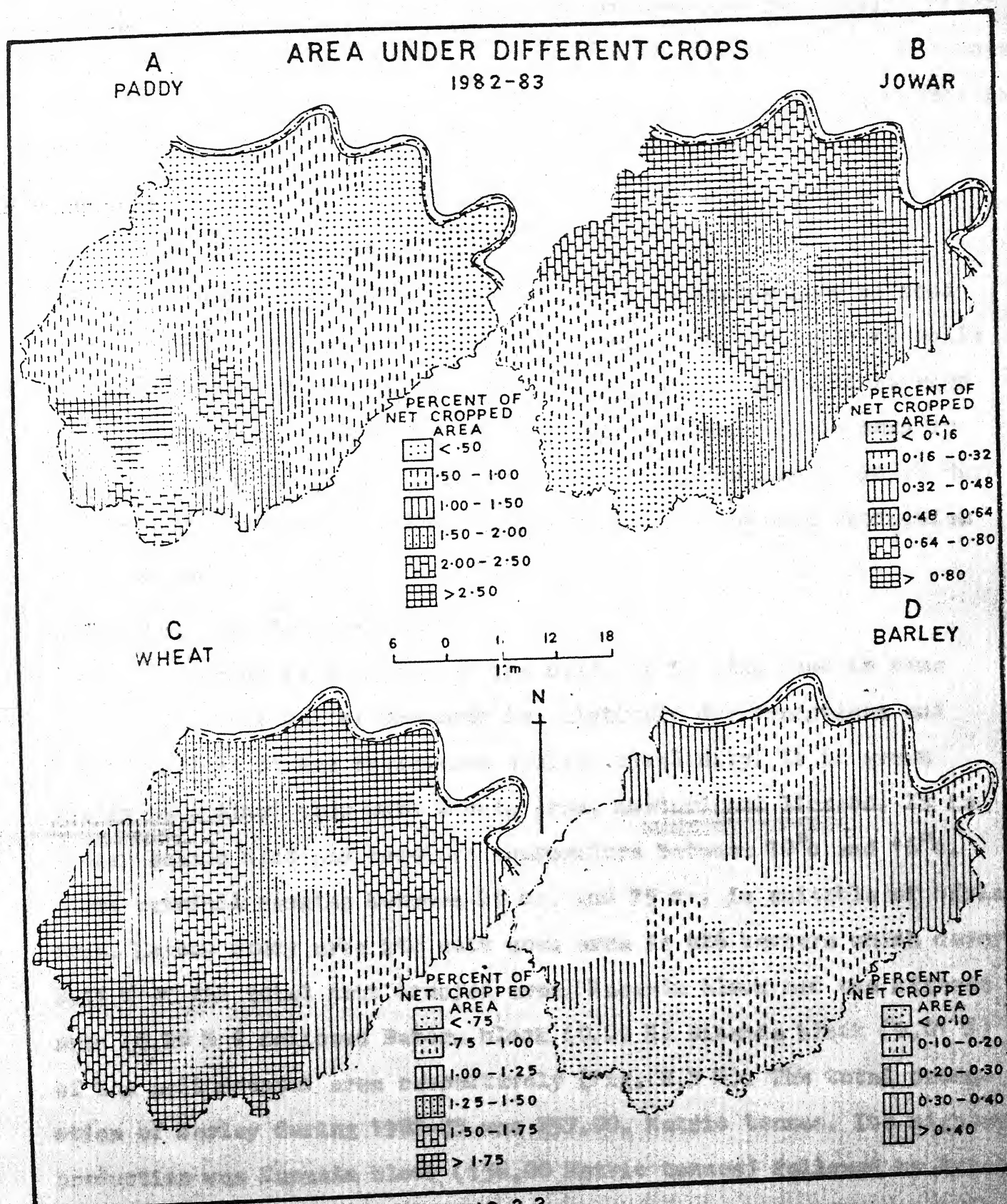


FIG. 2-3

5.07 % and 2.07 % of the total nett cropped area in the tahsil (Fig. 2.3 B). The production of Jowar during 1982-83 was 15617 Metric tonnes with a per hectare production of 947.97 Kgs. Fig. 2.4 D. The regression relationship between the area under Jowar and its production shows a positive tendency ($y = 3.59 + 0.95 X$ & $r = 0.92$) Fig. no. 2.5 C.

Bajra (*Pennisetum Typhoideum*) :

Bajra is one of the chief Millets generally used as food by the poor and fodder by animals. It is grown in a variety of soils but well drained loamy and clay soils are most suitable. It is sown in July-August and harvested in November-December. It is sown in about 2.10 % of total nett cropped area. The production of Bajra during 1982-83 was 1771.00 metric tonnes with a per hectare production of 662.05 Kgs.

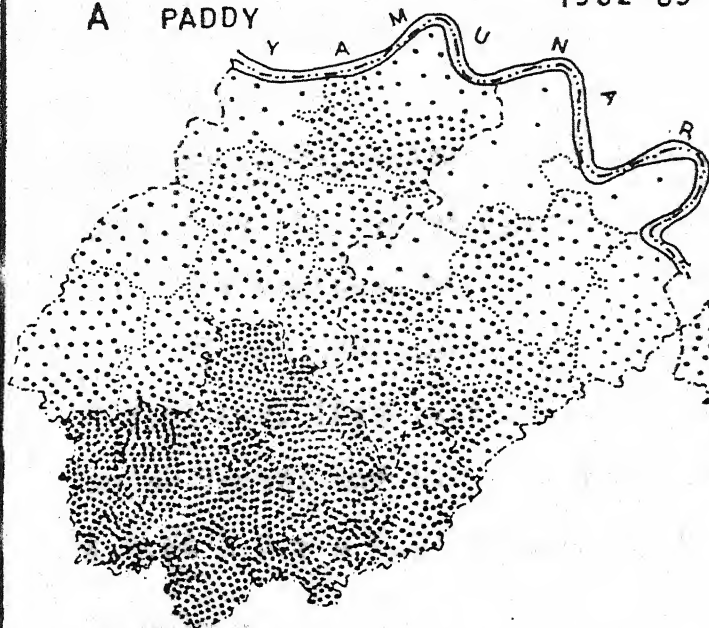
Barley (*Hordeum Vulgare* Linn) :

Barley is the food of the poor. It is also used in some industries. This can be produced in relatively dry conditions and light soils as it has resistance against alkalinity. It is grown mostly as a mixed crop with wheat, gram, mustard and linseed. It is winter season crop and requires temperature between 10°C and 16°C. Light rainfall ranging between 25 cm. and 75 cm. is suitable for Barley crop. In the study area its nett sown area is 426 hectare which covers 0.33 % of the total nett cropped area. Kamasin block had the highest area (0.20 %) followed Baberu block (0.09 %) Bisanda block (0.04 %) of the nett cropped area respectively (Fig. 2.3 D). The total production of Barley during 1982-83 was 257.00. Metric tonnes. Its highest production was Kamasin block (156.00 Metric tonnes) followed by Baberu block 72.00 Metric tonnes and Bisenda 29.00 metric tonnes in the area. The per hectare production of Barley in the study area is 603.28 Kgs. (Fig. 2.4 c). The area and production of Barley exhibit positive correlation ($y = 0.64 + 0.57 X$ & $r = 0.97$ Fig. no. 2.5 D).

PRODUCTION OF DIFFERENT CROPS

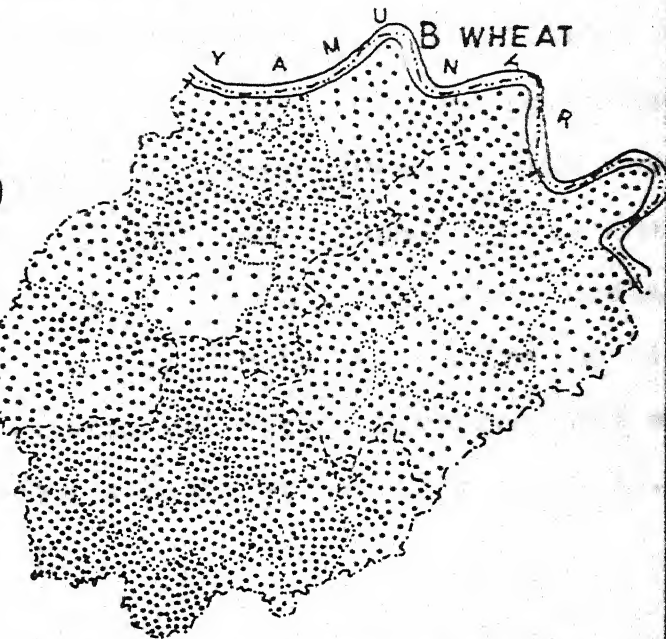
1982-83

A PADDY



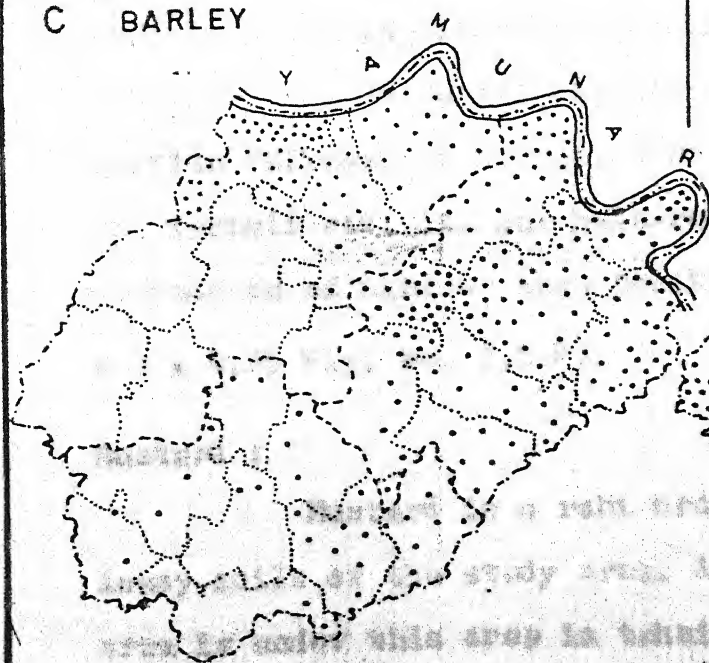
EACH DOT REPRESENTS 10 METRIC TONNES

B WHEAT



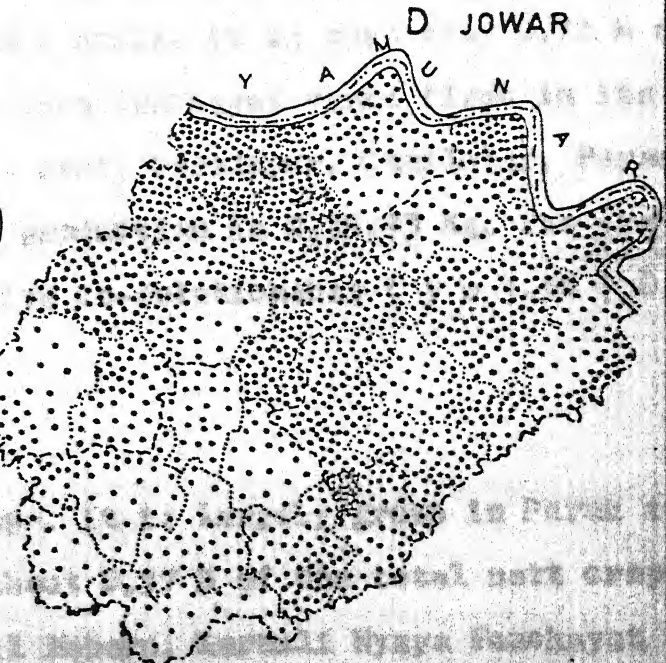
EACH DOT REPRESENTS 25 METRIC TONNES

C BARLEY



EACH DOT REPRESENTS 1 METRIC TONNE

D JOWAR



EACH DOT REPRESENTS 10 METRIC TONNES



FIG. 2.4

Lentil :

Lentil is an important pulse crop which is sown in Rabi crops of the study area. It is sown over 7366 hectares which account for 5.80 % of the total cultivated area. Karhuli Nyaya Panchayat possesses maximum area (759 hectare) under this crop followed by Hardauli (543 hectare), Palhari (524 hectare). The minimum area has been represented by Bira Nyaya Panchayat (117 hectare) and Sunahuli Nyaya Panchayat (111 hectare) Fig. 2.1 C. The annual production of lentil during 1982-83 was 5751 metric tonnes with its per hectare production of 225.35 Kgs. (Fig. 2.2 C). The regression relationship between the area under lentil and its production shows a positive tendency ($y = 40.29 + 0.64 X$ & $r = 0.94$ Fig. no. 2.5 E).

Linseed :

Linseed is an important crop of oil seeds. It is grown mixed with wheat, gram, and barley and also as a single crop. This crop is grown in alluvial and black soils. It is sown over 0.72 % of the total cropped area. Kamasin Nyaya Panchayat ranks first in its production followed by Audaha, Sanda Sani, Narainpur, Chhilolar, Parsauli and Karhuli etc. Its per hectare production is 2.35.93 Kg. The area and production of Linseed show positive co-relationship ($y = 1.53 + 0.19 X$ & $r = 0.95$ Fig. no. 2.5 F).

Mustard :

Mustard is a rabi crop. It is largely grown in Parua and loamy soils of the study area. About 0.37 % of the total nett cropped area is under this crop in tahsil Baberu. Karhuli Nyaya Panchayat represent the maximum area (41 hectare) under this crop followed by Hardauli (29 hectare), Audaha (29 hectare), Kamasin (28 hectare) Bisanda, and Kamasin (24 hectare) Nyaya Panchayat. The total annual production of mustard during 1982-83 was 208 metric tonnes as well as per hectare

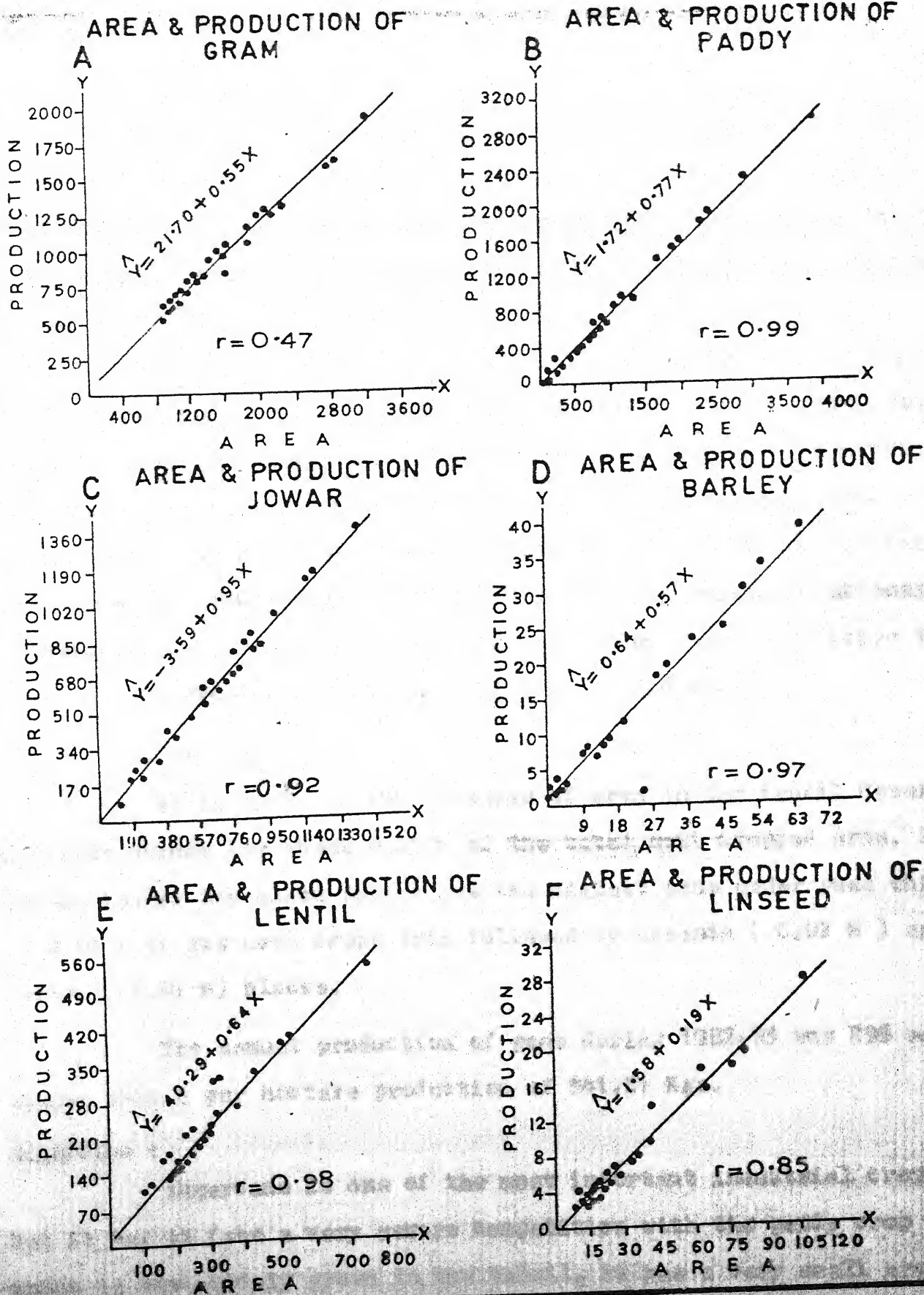


FIG. 2.5

production 437.99 Kgs. The area and production of mustard show positive co-relationship ($y = -0.38 + 7.99 X$ & $r = 0.87$ Fig. no. 2.6 C).

Arhar (Gajanus Cejan) :

Arhar is an important pulse crop which is sown in Kharif season and harvested after the winter season. The total area under this crop was 5909 hectares which accounted for 4.65 % of the total cropped area in the tahsil (Fig. 2.1 D). The block wise distribution of its area is 2.06 %, 2.05 % and 0.53 % in Baberu, Kamasin and Bhsanda blocks respectively. Nyaya Panchayat of Kamasin block marked the highest produce Kamasin during 1982-83 which was 704 metric tonnes. It was followed by Audaha (572 metric tonnes), parsauli (568 metric tonnes) and Karhuli Muafi (497 metric tonnes). The total annual production of Arhar was 8065 metric tonnes, with its total per hectare production of 1364.86 Kgs. (Fig. 2.2 D). The regression relationship between the area under Arhar and its production shows a positive tendency ($y = 0.079 + 0.73 X$ & $r = 0.99$ Fig. no.2.6 A).

Peas (Pisum Satium) :

It is grown in 296 hectares of area in the tahsil Baberu. Its area stands for about 0.23 % of the total nett cropped area. In Baberu tahsil the block Baberu has the highest area under peas which is 0.03 % of its nett crops area followed by Bisanda (0.02 %) and Kamasin (0.01 %) blocks.

The annual production of peas during 1982-83 was 296 metric tonnes with a per hectare production of 841.21 Kgs.

Sugarcane :

Sugarcane is one of the most important industrial crops but it has to face a very severe competition with the paddy crop which is most widely grown in the tahsil. It has a very small area of 0.03 % of the nett cropped area. Bisanda nyaya panchayat has the

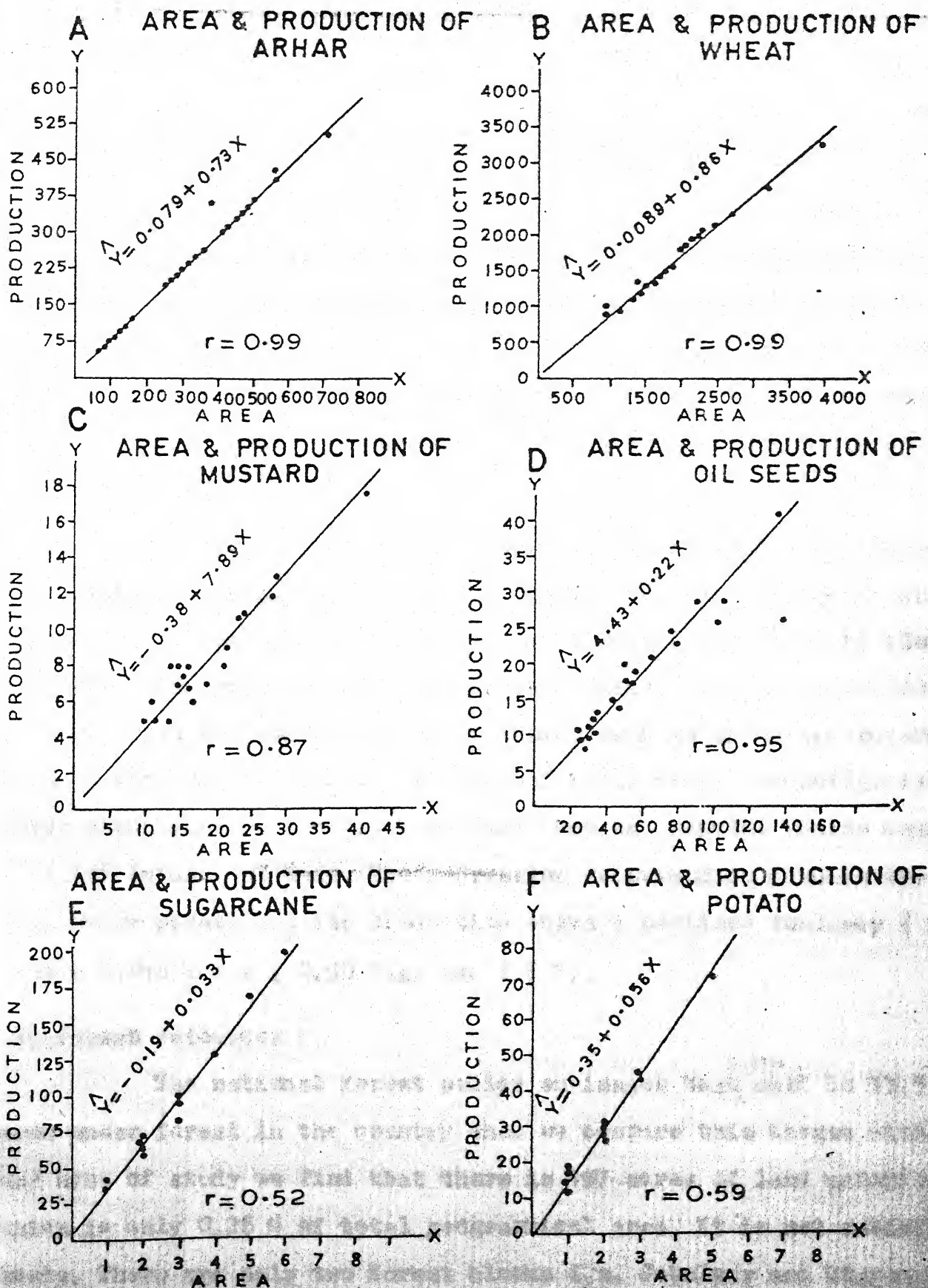


FIG. 2-6

highest area under sugarcane crop followed by Karhuli Muafi, Chandrayal, Harauli and Chausad Nyaya Panchayat. The total production of sugarcane during 1982-83 was 1350 metric tonnes. Bisanda nyaya panchayat represented the maximum production (200 metric tonnes), followed by Karhuli Muafi (166 tonnes) Chandrayal (130 tonnes), Bhadehdu (100 tonnes) and Chausad (98 tonnes). Audaha, Bira, Narainpur, Sunahuli, Parsauli, Sanda Sani and Chhilolar nyaya panchayats have no production under this crop. The per hectare production of sugarcane is 32.92 metric tonnes Appendix II-4. The area and production of sugarcane exhibit positive co-relationship ($y = -0.19 + 0.033 X \text{ \& } 4 = 0.52$ Fig. no. 2.6 E).

Besides above mentioned crops a few crops of minor importance such as sawan, Kodo, Potato, Tobacco etc. are also grown in a small area of the tahsil. The above description also makes it clear that the food crops are dominant in the tahsil where as the crops of industrial and commercial significance such as groundnut sugarcane, cotton, Jute, tobacco, Indigo and betel crops are insignificant. Which must be increased so that they may provide stable commercial and industrial base. The regression relationship between the area under potato and its production shows a positive tendency ($y = 0.35 + 0.056 X \text{ \& } r = 0.59$ Fig. no. 2.6 F).

(B) Forest resources :

The national forest policy envisages that ^{there} must be 33.5 % area under forest in the country when we compare this target with our area of study we find that there is 197 acres of land under forest which is only 0.26 % of total geographical area. It is not satisfactory state. There are only two forest blocks i.e. Jabalpur and Utarwan. They are divided in two ranges Jabalpur block of Banda range and Utarwan block of Karwi range. The following table shows the types, distribution of forested area and per capital forest cover (Table-3).

Table 3
Types of forest in tahsil Baberu, 1982-83

Sl. No.	Forest categories	Area in acres	Per capita forest cover in acres
1	2	3	4
1.	Reserved forest	167	0.0004
2.	Protected forest	513	0.0015
3.	Unclassified forest	332	0.0009
Total Tahsil Baberu		1017	0.0028

Source : District Forest Office, Banda (U.P.)

The forest cover of Baberu tahsil comprises of 338 hectares of land representing 0.22 % of total geographical area of the study region. Bisanda block has the highest percentage under the forest i.e. 60.65 % of the total forested area which is followed by Baberu (33.72 %) and Kamasin (5.63 %) blocks. The following table shows the block wise distribution of forest cover and percapita forested area (Fig. 2.7 C).

Table 4
Forest cover and per Capita Forested Area in Tahsil Baberu, 1982-83

Sl. No.	Block	Total Geographical area (in hectare)	Forested area in (hectares)	Total forested area in %	% of total area of the tahsil	Per capita forested area in hectares.
1	2	3	4	5	6	7
1.	Baberu	58370	114	33.72	0.67	0.00032
2.	Bisanda	47506	205	60.65	0.01	0.00057
3.	Kamasin	52886	19	5.63	0.12	0.00005
Tahsil Baberu		158762	338	100.00	0.20	0.00094

Source : District Statistical Magazine, Banda, 1982-83.

The forests of tahsil Baberu are of mixed dry deciduous types and have the trees of teak, orber, tristis, bolullia serrata, sterculia wureus, gossypium etc. Among other miscellaneous trees which grow in the plain areas in the tahsil are Mahua (Maducalati falia), Pipal (Fiscus Religiosa) Mango (Magnifera indica), Neem (Margosa), Bargad (Fiscus indica), Gular (Fiscus glomerarta), Jamun, Anla, Inli and Kaitha. In the species are mixed with thorny forests.

As there is very negligible forest cover therefore a very little quantity of commercial timber is availed. The study area requires a planned a forestation programme in the ravine and other barren area.

2.2 ANIMAL HUSBANDRY :

Livestock possesses unique importance in Indian agriculture. The rate of animals in farm operations can not be curtailed for many years to come because there is a great difficulty in machenizing farm operation and the cattle by providing milk and other products contribute much to the gross national product of the country. Therefore, in the integrated rural development programme of Banda district where machenization has just started much emphasis can be given on the development of cattle and animal husbandry and the breeding, feeding, disease control and management and marketing must be the part of animal development policy.

The availability of livestock and other relevant aspects have been dealt in the following lines. The following table shows the present position of livestock in tahsil Baberu.

Table 5
Distribution and Percent of Livestock in Tahsil Baberu,
1982-83

Sl. no.	Livestock categories	Total number	Percent to the tahsil livestock
1	2	3	4
1.	Cattle	146191	56.17
2.	Buffaloes	57192	21.97
3.	Sheep & Goats	41009	15.75
4.	Loading animals	1412	0.54
5.	Pigs	6705	2.57
6.	Poultry	7330	2.83
7.	Others	436	0.17
Total		260275	100 %

Source : District Statistical Magazine, Banda, 1982-83.

Cattle :

From the above table it is evident that the cattle is the most significant segment of livestock in tahsil Baberu. It is because of the direct importance of oxen in agricultural operations. For the development of the cattle in Banda and Allahabad district, the Prayag, Chitrakoot Krishi Awam Godhan Vikas Nigam is working for cattle and dairy development on the Amuls pattern. The improvement of local cattle through Jersey and various other subsidiary programmes have been launched for the development of cattle in the district.

Buffaloes :

The total number of buffaloes in tahsil Baberu was 57192 in 1973-79 out of which 30855 were milching. The density of buffaloes was 0.20 per Sq.Km.

To improve the variety of buffaloes in the area superior study is one

The buffalo is required for one hundred she buffaloes. To increase the milk yield the controlled breeding and feeding is very important. It has been estimated that balanced feeding can result an increase of 32.50 % productive capacity of buffaloes.

To increase the cattle and buffalo feed and fodder resources the following innovations must be adopted in the study area.

- (i) The cultivators should include fodder crops specially legumes.
- (ii) The seeds and routes should be popularised in the area.
- (iii) The prevention of circular fodder by chaffing should be popularised.
- (iv) The balanced feeding by ensuring the supply of oil cakes, salt and other concentrate on a no loss no profit basis either through co-operative or panchayat must be popularised. Paddy straw mixed with green leguminous fodder must be used.

Sheep and goats :

In Switzerland the milk-goat is said to be swiss boys' foster mother. Though sheep are very important for the supply of wool and manure to the fields. But their number in the study area is very poor because of the unfavourable geographical conditions for rearing of sheep. The total number of sheep was 5914 in 1978-79. The sheep are reared with goats in the study area. As there is no collection centre of wool in Baberu tahsil so that production of wool can not be authentically estimated.

Goats :

The number of goats is above 5 times greater than that of sheep. The total number of goats was 35095. The goats are the chief supply of meat in the area.

All the sheep and goats are of indigenous variety. To increase the wool and meat in the area the Merino variety should be popularised.

Loading animals :

The animals used for riding and load carrying are called loading animals. Horses, mules, donkeys and camels are such animals. The total number of loading animals in tahsil Baberu was 1412 which is a very poor number. It shows that the rearing of loading animals has been neglected to a great extent.

Pigs :

Pigs are the most prolific^{-ally} growing among all the domestic animals. Generally a unit of ten sows and one boar produces 160 piglets during the first year. In tahsil Baberu the total number of pigs was 6705 which is 28.47 % of the total pigs in the district. The pigs are important both for meat and bristle. As the pigs of the tahsil Baberu are of indigenous variety therefore production is very low. To popularise the scientific rearing of pigs the following steps must be taken up.

- (a) The pig owners must be provided the up graded boars for this purpose. The pig^{gy} development scheme of the government must be utilized.
- (b) To improve the pig feed, the cultivators should include the yellow maize in the single crops.

Poultry :

According to the nutritional Advisory Committee of the Indian council of Medical Research an adult requires one egg every day for a balanced diet. Therefore, poultry development has unique importance in tahsil Baberu. There are 7330 poultry, which is a very little number. To increase the number of hens breed a multiplication centre at each block head quarter must be established and supply of improved birds, balanced feed and poultry farm requirement must be given top priority.

poultry keepers must be persuaded to form co-operative society for credit facilities.

2.3 EARTH RESOURCES :

(A) Soils :

Soil is one of the most important land resources of tahsil Baberu where agriculture is the main stay of its economy. Because the production of crops depends upon the water bearing capacity of soil. Tahsil Baberu is the eastern part of Bundelkhand plain, that is why the most of the soils are fertile if proper irrigation is added.

The soils of tahsil Baberu can be grouped into five major categories as under :

- (i) Coarse grained brown soils (Parua)
- (ii) Fine deep gray soils (Kabar)
- (iii) Shallow black soils (light Mar)
- (iv) Deep black soils (Mar), and
- (v) Ravinous soils (Kachhar and Tari)

The coarse grained brown (Parua) soils stretch along the ravinous belt of river Yamuna with the structure varying from clay loam to sandy loam. The nyaya panchayats of Audaha, Bira, Narainpur and Kamasin in Kamasin block and Nibhour, Bhabhua, Karhuli, Bagehta and Palhari in Baberu block exhibit the patches of this soil. The total area of the soil in tahsil Baberu is 1559.09 Sq.Km. It is well aerated, friable and receptive to irrigation. It is prized for various types of crops. It is deficient in iron, phosphate and nitrogen. The alkaline elements are in high quantity. Therefore, over irrigation is harmful.

The clay or Kabar soil has been formed partly in situ and partly by transportation. It is highly defused and the soil some where

looks similar to mar in physical characteristics. The patches of Kabar can be marked in Bhadehdu, Bisanda, Chandrayal, Chausad, Kurrahi, Pawaiya and Oran rural in Bisanda block and Santar, Hardauli, Bagehta, Palhari and Badagaon in Baberu block. It stretches over 423.63 Sq.Km. area of tahsil Baberu.

Shallow black and deep black soils popularly known as light mar and mar are alkaline soils mostly black in colour from light to deep some times mixed with Kankar. Therefore, they are friable and aerated. It is highly moisture retentive that is why, it is good for the cultivation of wheat, gram and sugarcane. The patches of light Mar are remarkable in Kamasin, Sunahuli, Parsauli, Sanda Seni, Chhilolar, Chausad, Pawaiya, Singhpur, Oran, Paras, Santar and Hardauli Nyaya Panchayats. The Mar soil is found in Audaha, Narainpur, Kamasin, Sunahuli, Sanda Seni, Nibhaur, Bhabhua, Karhuli, Paras, Santar, Hardauli, Bagehta, Palhari and Badagaon Nyaya panchayats. The area of light Mar and Mar soils is 387.90 Sq. Km. and 316.73 Sq. Km. respectively. Table 6 shows the nyaya panchayat wise area of different soils in tahsil Baberu.

Table 6

Nyaya Panchayat wise area of Different Soils in Tahsil Baberu.

(Area in Km²)

Sl. No.	Nyaya Panchayats	Coarse grained brown soils (Paruwa)	Fine deep gray soil (Kabar)	Shallow black soils (Light Mar)	Deep black soils (Mar)	Raviness (Kachhar and Tari)
1	2	3	4	5	6	7
1.	Nibhaur	50.20	-	-	9.46	11.96
2.	Bhabhua	17.00	-	-	29.00	0.30
3.	Karhuli Muafi	37.07	-	-	4.51	3.20
4.	Paras	-	-	4.37	34.10	-
5.	Santar	-	1.00	34.93	3.61	-

1	2	3	4	5	6	7
6. Harauli	-	13.32	9.68	68.23	-	-
7. Bagehta	21.01	2.00	-	38.24	-	-
8. Palhari	38.65	32.01	-	12.21	-	-
9. Badagaon	-	53.53	-	5.11	-	-
Block Baberu	213.93	101.96	48.98	203.47	15.46	
10. Audaha	58.90	-	-	22.18	15.09	
11. Bira	22.52	-	3.01	-	21.23	
12. Narainpur	51.31	-	0.81	6.15	7.72	
13. Kamasin	37.01	-	10.50	48.62	-	
14. Sunahuli	-	5.00	8.10	29.31	-	
15. Parsauli	-	-	54.11	-	-	
16. Sanda Sani	-	-	51.12	7.00	6.54	
17. Chhilolar	-	-	47.52	-	-	
Block Kamasin	169.74	5.00	185.17	113.26	55.69	
18. Bhadehdu	-	44.65	-	-	-	
19. Bisanda	-	84.83	-	-	-	
20. Chandroyal	-	46.79	-	-	-	
21. Chausad	-	60.09	3.80	-	1.03	
22. Kurrahi	-	57.61	-	-	-	
23. Pawaiya	-	13.38	33.94	-	-	
24. Oran Rural	-	-	70.00	-	3.01	
25. Singhpur	-	9.42	46.01	-	0.50	
Block Bisanda	-	316.77	153.75	-	4.54	
Total Tahsil Baberu	383.67	423.63	387.90	316.73	75.69	

Along the river Yamuna and its tributaries the riverine soils which vary from coarse sand to fine clay are found. Their belt is found along the channels and the shelving banks are covered with

Kachhar or alluvial soils. This soil is basic and most significant resource of the study area where agricultural is the mainstay of regional economy. The following table represents the main characteristics of Rakar, Paruwa and Kabar soils.

Table 7
Soil Characteristics of Tahsil Baberu

Sl No.	Characteristics	Soils		
		Gravelly soils (Banda Type I or Rankar)	Coarse grained brown soils (Banda type II or Paruwa)	Fine deep soils or (Banda type III)
1	2	3	4	5
1. Profile development		nature	nature	nature
2. Colour		Brownish red & reddish brown	Greyish brown to brownish grey	grey to dark grey
3. Texture		Coarse gravelly	Sandy loam	Clayee loam
4. Structure		Structure less	Single grained structure	Angular blackish
5. Concretions		Rocky fragments	Small Calcareous concretions in sub soil	Kakar nodules in sub-soil.
6. Sesquioxides		no alluviation	alluviation	Marked alluviation.
7. Cementation		no cementation	no cementation	compact
8. Lime		Low	average	average
9. Maganesia		Low	high	average
10. Saluble salts		Low	Low	moderate
11. PH		Neutral	Neutral	Neutral
12. Clay		Low	Average	High
13. Clay		Low	Average	Restricted

Source : Soil survey and soil work in U.P. Vol. VII, Deptt. of Agriculture, C.S.A. University Kanpur, p.57.

(B) Water Resources :**|a| Irrigation :**

In the present revolutionized system of agriculture water resource has utmost importance specially for irrigation purposes. Since past wells have been chief and important sources of water in the study region. At present the main sources of water supply are the government canals tube wells, ordinary wells bandhies and tanks.

Government Canals :

The government canals are the main sources of water supply and irrigation. About 96.40 % of the total irrigated area is covered by the government canals. The tahsil is watered by the tubitaries of Ken Canal which was brought out from Bariyarpur barradge constructed on the river Ken in 1880. It's capacity is 426 Million cft. of water and discharge 2000 cusecs. The Ken canal commands 6.4 lakh hectares of land of Banda district. Another barrage near Gangau village in Chhaterpur district has been constructed to compensate the adequate supply of water for the canal. The main canal running parallel to the Ken river bifercates into two branches near Pangara village in Naraini tahsil. They are the Banda Branch and the Atarra branch, Atarra branch again bifercates into the Bisanda branch and the Baberu branch from Gadaon. About 39.42 % of area commanded by the Ken Canal falls in tahsil Baberu. It has maney minors such as Bhitl, Chaused, Ballan, Tendura, Sandh, Kamasin, Pindkhar and Gheori in the tahsil. The total length of both the branches is 269 Kms. and the length of minors is 105 Kms.

Augasi Pump Canal :

The scheme was completed in 1982-83. It has been constructed near Augasi village with an irrigating capacity of 12140 hectares of the tahsil. Its channel has been connected to the Baberu branch of the Ken Canal.

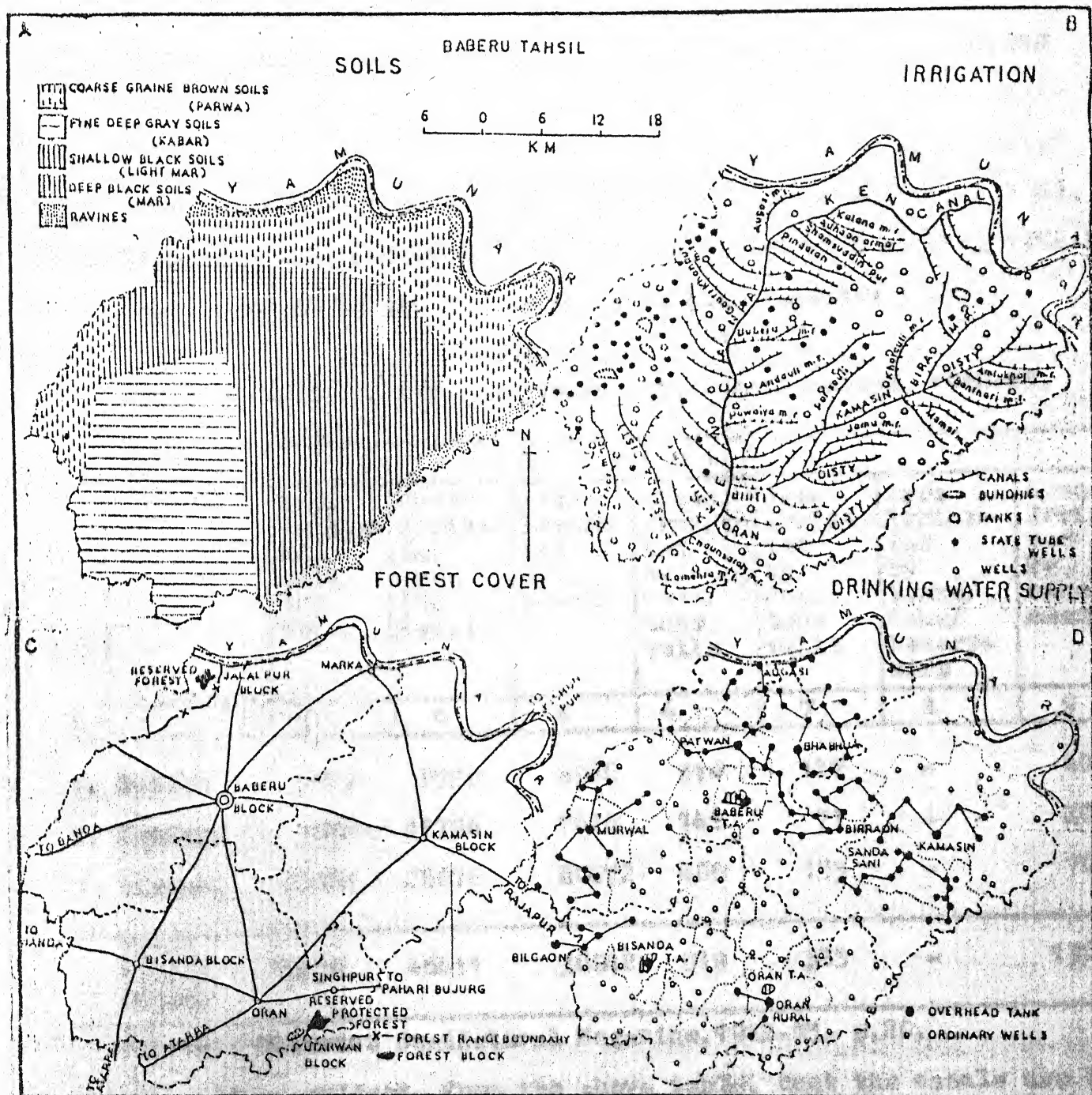


FIG. 2-7

Other Sources :

The other sources of water supply and irrigation in tahsil Baberu are the government tube wells, private tube wells, pumping sets, ordinary wells, tanks and bandhies which have a very negligible share of irrigation in the tahsil. The following table shows the block wise irrigated area by the different sources.(Fig.2.7 B). The blockwise nett irrigated area and gross irrigated area in 1982-83 has been depicted in the following table (See Appendix II-7).

Table B
Irrigated Area by Different Sources in Tahsil Baberu, 1982-83.

Sl. No.	Name of blocks	Sources						
		Nett Irrigated area (in Hec.)	Gross Irrigated area (in hec.)	Area Irrigated by canals	Areas Irrigated by Govt. tube wells	Area Irrigated by Pvt. tube wells	Area Irrigated by tanks/Lake/Reservoirs	Areas Irrigated by other means.
1	2	3	4	5	6	7	8	9
1.	Baberu	9413	9939	8946	310	117	-	40
2.	Kamasin	7556	11796	7624	141	71	-	20
3.	Bisanda	20945	26676	20272	469	135	-	70
Total Tahsil Baberu		38214	46411	36842	919	323	-	130

Source : District Statistical Magazine, 1982-83, p.20.

It is evident, from the above table, that the canals are the most important sources of irrigation in the area of study. Bisanda Block has the largest area irrigated by canals. It is because of sufficient net of canals and minors. The block stands first in tube well irrigation also. It possesses bundhies and other sources also. Baberu and Kamasin blocks follow it in canal, tube well and bundhi irrigation.

Table 9
Means of Irrigation in Tahsil Baberu, 1992-93

Sr. No.	Blocks	Length of Canal (in Kms)	No. of Govt. tube wells	No. of Private tube wells.	Pit borings	No. of wells	No. of Rahat	Area of Bandhies (in hec.)
1	2	3	4	5	6	7	8	9
1.	Baberu	92	48	94	9	928	2	4083
2.	Kamasin	49	19	63	11	613	-	2940
3.	Bisanda	128	9	232	20	1167	6	3283
Total Tahsil Baberu		269	76	379	40	2708	8	10306

Source : District Statistical magazine, 1992-93, p.35.

(b) Drinking water supply :

The drinking water supply in tahsil Baberu has been maintained by the sixteenth branch of Uttar Pradesh Corporation. It has been divided in two parts :

- (i) Urban drinking water supply scheme.
- (ii) Rural drinking water supply scheme.

Urban drinking water supply :

There are three urban centres in tahsil Baberu, Baberu town area oran town area and Bisanda town area. Till march 1995 the position of these schemes was as follows (table 10, fig. 2.7 D and Appendix II-5).

Table 10
Urban Centres Drinking Water Supply Scheme in Tahsil Baberu, 1994-95.

Sr. No.	Urban centres	Population in 1981	No. of tube-wells	No. of over head tanks	Rate of drinking water supply in Liters	Positions
1	2	3	4	5	6	7
1.	Baberu T.A.	9695	2	1	100	Complete
2.	Oran T.A.	4147	2	5	90	Complete
3.	Bisanda T.A.	7193	2	1	150	Under Construction
Total urban centres		21040	6	7	340	

Source : U.P. Jal Nigam Office, sixteenth branch District, Banda.

Baberu town drinking water supply scheme :

It was started in June 1990. It has been completed at the cost of rupees 11 lakhs, It supplies drinking water to the town and adjacent areas at the rate of 100 liter per day per capita. The total population benefited by the scheme is 16500 persons.

Oran town drinking water supply scheme :

It was started in July 1990. It provides clean water to 9750 persons. Its rate of supply is 90 liters per capita per day. Oran town area and adjacent areas are benefited by the scheme. Its total cost is about Rs. 23.72 lakhs.

Bisanda town drinking water supply scheme :

It was started in 1984-85 and is still under construction. The expenditure in this scheme is expected to be rupees 24.27 lakhs. It will supply 150 liters of water per day per capita. After its completion Bisanda town area and near ^{by} villages will be benefited. About 60 % percent of work has been completed.

Rural drinking water supply schemes :

The rural drinking water supply includes the provision of clean drinking water supply by tube wells and over head tanks. The scheme has been divided into three main groups.

Oran group of villages scheme :

It is the part of oran town area water supply scheme. The villages near oran town area have been constructed under this scheme about 12785 people are getting benefits.

Birraon group of villages scheme :

This scheme was launched in 1975 and two tube wells and ten over head tanks have been constructed. About 12 villages with the population of 11109 are getting benefits.

Kamasin group of villages scheme :

It includes 7 villages. Two tube wells and 7 over head tanks have been constructed under this scheme. The scheme was started in the year 1974-75 and is almost complete, the benefited population is about 12396 persons.

The details of these rural water supply scheme have been given in the following table :

Table 11
Rural Drinking Water Supply in Tahsil Baberu, 1995

Sl. No.	Schemes	Villages under scheme		Population in 1991.	Tahsil/Blocks
		Sl.No.	Villages		
1	2	3	4	5	6
1. Oran group of villages scheme		1. Nandan Mau		2062	Baberu/Bisanda
		2. Bagha		4233	" "
		3. Beri Bekhandi		725	" "
		4. Shahpur Sani		2039	" "
2. Birraon Group of villages scheme		1. Umrahani		2171	Baberu/Baberu
		2. Santar		960	" "
		3. Birraon		2402	" "
		4. Dataura		676	" "
		5. Binwat		1455	Baberu/Kamasin
		6. Gurauli Uperhar		482	" "
		7. Sunahula		450	" "
		8. Andauli		1376	" "
		9. Pali		918	" "
		10. Sunahuli		467	" "
		11. Satniaon		2191	" "
		12. Budhauri		1007	" "
3. Kamasin group of villages scheme		1. Kumendha Sani		2363	Baberu/Kamasin
		2. Kedohar		175	" "

1	2	3	4	5	6
		3.Kamasin		4595	Baberu/ Kamasin
		4.Pachhauhan		3502	" "
		5.Benamau		1014	" "
		6.Anlokhar		1328	" "
		7.Kharauli		1345	" "

Source : U.P.Jal Nigam Office Sixteenth Branch, District Banda.

Schemes under construction :

In addition to above mentioned rural drinking water scheme, there are seven other scheme under constructions. They are as follows :

Murwal group of villages scheme :

The estimated expenditure on this scheme is rupees 72.524 Lakhs. Till March 1985 twenty three villages have been provided with two pumping sets. About 85 % of the scheme has been completed.

Bilgaon group of villages schemes :

The estimated cost of construction under this scheme is rupees 71.17 Lakhs. Eighteen villages are proposed to be provided clean drinking water.

Patwan group of villages scheme :

The estimated expenditure on this scheme is rupees 59.125 Lakhs. Thirteen villages shall be provided drinking water with the completion of ten over head tanks. The scheme is expected to be completed till December 12, 1986.

Sanda Sani Group of villages scheme :

The estimated cost of this scheme is rupees 50.58 lakhs. About sixteen revenue villages shall be benefited. It is almost completed.

Bhabhua group of villages scheme :

The estimated cost of this scheme is rupees 47.53 Lakhs. Fourteen revenue villages have been included in the scheme. It is expected that the scheme will be completed till December 12, 1986.

Augasi group of villages scheme :

It is estimated that the scheme will cost rupees 29.91 Lakhs. Three over head tanks staff quarters and distribution system have been completed.

Bisanda town area scheme :

Its estimated cost is rupees 24-27 Lakhs. About 60 % scheme has been completed. Below are the details of drinking water scheme under construction in tahsil Baberu table 12.

Table 12
Details of Drinking Water Scheme under Construction in Tahsil Baberu.

Sl. No.	Scheme	Included villages	Population in 1981	Water supply per head per day in Lts.	No. of tube wells	No. of over head tanks.
1	2	3	4	5	6	7
1.	Bisanda town area scheme	1	5929	150	2	1
2.	Murwal group of village scheme	24	22746	100	2	13
3.	Bilgaon group of village scheme	19	20988	100	2	12
4.	Patwan group of village scheme	13	12425	100	2	10
5.	Sanda Sani group of village scheme	16	15146	70	2	7
6.	Bhabhua group of villages scheme	14	13907	100	2	6
7.	Augasi group of villages scheme	8	7661	100	2	5

Source : U.P. Jal Nigam Office Sixteenth Branch, District- Banda.

Inspite of above mentioned scheme of drinking water in rural areas, there are a number of villages in tahsil Baberu, which

are suffering from water scarcity. About 94 villages are yet to be provided drinking water.

2.4 COMPLEMENTARITY OF RESOURCES FOR ECONOMIC DEVELOPMENT :

As discussed previously agriculture is the mainstay of the space economy of the region. A close observation of the availability and consumption of various crop products of the region reveals that there is an ample complementarity between agricultural production and consumption in various household and small industries. The following table indicates the surplus and deficit amount of the production of some important agricultural crops in the study area table 13.

Table 13
Blocks wise Surplus and Deficit of Agricultural Production, 1982-83.

(In Metric tonnes)

Sl. No.	Crops	Baberu Block			Kamasin Block		
		Production of crops in tonnes	Consumption in tonnes	Surplus/deficit	Production of crops in tonnes	Consumption in tonnes	Surplus/deficit
1	2	3	4	5	6	7	8
1.	Rice	4420	4396.24	+ 23.76	3691	3219.34	+ 461.66
2.	Wheat	14428	8226.95	+ 6201.05	10415	6582.24	+ 3832.76
3.	Pulses	15331	2762.96	+12568.04	13694	1914.26	+ 11779.74
4.	Oil Seeds	148	172.72	- 24.72	205	157.51	+ 47.49
5.	Sugar Cane	560	399.95	+ 160.05	33	136.54	- 103.54
6.	Potato	205	1416.95	- 1211.95	161	276.41	- 115.41
7.	Barley	72	63.43	+ 8.57	156	50.84	+ 105.16
8.	Jowar	7019	2720.38	+ 4298.62	6104	1940.54	+ 4163.46
9.	Millet	381	310.95	+ 70.05	1036	258.13	+ 777.87
10.	Maize	-	-	-	-	-	-
11.	Tobacco	3	4.87	- 1.87	-	3.99	- 3.99
12.	Flax	56	25.25	+ 30.75	42	18.50	+ 23.50
13.	Other crops	13	7.81	+ 5.19	23	10.35	+ 12.65

Sl. No.	Crops	Bisanda Block			Tahsil Baberu		
		Production of crops in tonnes	Consumption in tonnes	Surplus/deficit	Production of crops in tonnes	Consumption in tonnes	Surplus/deficit
1	2	9	10	11	12	13	14
1.	Rice	14657	3955.92	+ 10701.08	22758	11571.50	+ 11186.50
2.	Wheat	17438	7462.21	+ 9975.79	42281	22271.40	+ 20009.60
3.	Pulses	9037	2167.84	+ 6869.16	59062	6845.06	+ 31216.94
4.	Oil Seeds	88	178.04	- 90.04	441	508227	- 67.27
5.	Sugar Cane	757	469.59	+ 287.41	21350	1006.08	+ 343.92
6.	Potato	322	1105.14	- 783.14	698	2798.50	- 2110.50
7.	Barley	29	25.30	+ 3.70	257	139.57	+ 117.43
8.	Jowar	2494	1944.95	+ 549.05	15617	6605.87	+ 9011.13
9.	Millet	354	196.37	+ 157.63	1771	765445	+ 1005.55
10.	Maize	-	-	-	-	-	-
11.	Tobacco	1	3.47	- 2.47	4	12.33	- 8.33
12.	Flax	18	10.81	+ 7.19	116	54.56	+ 61.44
13.	Other crops	11	9.26	+ 2.74	47	26.42	+ 20.58

Source : Tahsil Head Quarter Baberu, Distt. Banda.

It is obvious from the above table that the tahsil is rich in food crops like wheat, rice, pulses, jowar, millet, barley etc. There are a few other crops also which are showing marginal surplus production. They are sugarcane and flax. The region is deficient in the production of oil seeds, potato and tobacco. However, the region exhibits high potentials for the agro-based industry development. More than 10 thousand metric tonnes of rice, 20 thousand metric tonnes of wheat, 31 thousand metric tonnes of pulses are in surplus quantity. This quantity can be utilized in the establishment of a few more rice mills, Aata Chakki and Dal Mills in the region which can aid in removing industrial backwardness and generating better employment.

opportunity to the people of the region. Other crops of marginal surplus production like sugarcane, flax and jowar require encouragement for higher production and industry development. The crops of industrial significance which denote a deficit in their production should also be encouraged. Oil seeds, potato and tobacco have good industrial prospects if proper attention is paid to increase the production of the crops (Appendix II-6).

The blockwise analysis of surplus and deficit production clarifies that Bisanda block leads in rice production as well as in wheat production. The surplus production of pulses is higher in Baberu and Kanasin development blocks. The production of sugarcane, an important crop of industrial significance, is in surplus quantity in Bisanda block. The locations of agro-based industries on the basis of surplus quantity production have been discussed in chapter VI.

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CHAPTER - THREE

PRESENT INFRA STRUCTURE

3.1 TRANSPORT NET WORK :

A transport net work reflects its regional economic social condition and political organization evolves step by step through the stage of primary diffusion condensation and saturation it does not come into existence suddenly¹.

The development of roads in the tahsil starts about more than ^a century back. Mr. Erskine, the first collector of Bundelkhand (1906-7) mentions². "The roads through out the district are generally in so bad condition as almost entirely includes the use of wheel carriers". The begining of roads in the study area starts with the initiation of 20th century.

Other unmetalled and inferior roads which were in existence at this time are given in the following table :

Table 1
Unmetalled Roads in Tahsil Baberu, 1908.

S1 No	Class	From	To	Length in miles
1	2	3	4	5
1.	Second class roads	Oran	Baberu	13
	Unmetalled bridged	Oran	Badausa	11
	and drained through	Baberu	Augasi	10
	out.			
2.	Second class roads	Banda	Baberu	23
	Partially bridged and	Oran	Kamasin	15
	drained.	Dandau	Kamasin	11
3.	Six class roads	Baberu	Marka	13
	cleared only.	Oran	Atarra	6
		Paprenda	Tindwari	9
		Kamasin	Rajapur	43.4

Before 1946, all the roads of the tahsil Baberu were unmetalled. The metalling of the roads started in 1946. During this year apart of about 12 miles from Banda to Aliha was metalled and it was finally completed after ten years in 1956. The rest 10 miles from Aliha to Baberu was metalled and open for transportation in 1964. After this, during the Sixth Five Year Plans several other link roads were constructed. The roads constructed during 1956 to 1982 are Banda-Baberu (32 Km.), Baberu-Kamasin (22 Km.) Baberu-Tindwari (19.1 Km.) Banda-Singhpur via Bisanda (55 Km.) Baberu-Atarra (33 Km.) Baberu-Oran (20.6 Km.) Baberu-Augasi (15.2 Km.) & Baberu-Marka (22 Km.) Fig. 3.1 depicted the present transport nett work in tahsil Baberu.

(A) Types of road reticle :

On the basis of administrative function the roads have been classified in to three categories :

National highways,
State highways; and
District roads

In Baberu tahsil the national and state highways are absent. There are only district roads. The district roads may be divided into three categories as mentioned below :

(i) Major roads :

They are important link roads. They connect the different parts of the district with the national and state highways. Banda-Baberu, Baberu-Tindwari, Baberu-Atarra and Banda-Singhpur via Bisanda are such roads.

(ii) Minor roads :

They are the feeder of major roads. Baberu-Augasi, Baberu-Marka, Baberu-Oran, Oran-Kamasin, Baberu-Kamasin and Marka-Kamasin are such roads.

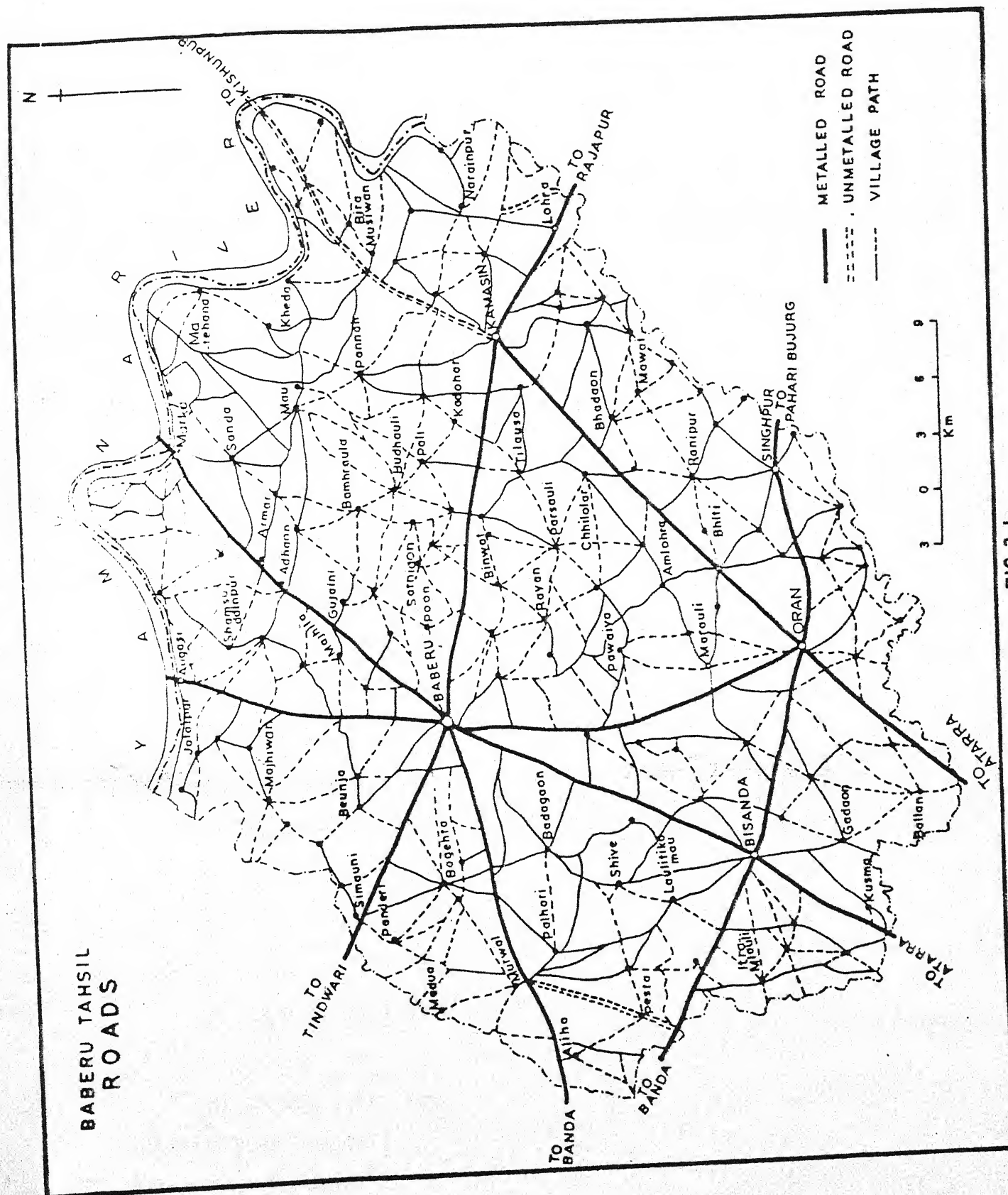


FIG.3-1

(iii) Villages roads :

They are mostly unmetalled roads and connect one village to another, one village or a group of villages to the district roads. The following table represents the length of different types of roads in the tahsil.

Table 2
Length of Different Types of Roads in Tahsil Baberu, 1993-94.

Sl No	Types of roads	Length of roads (in Km)
1	2	3
(A)	National Highways	Nil
(B)	State Highways	Nil
(C)	District Roads	
(i)	Major roads -	147.1
	a Banda to Baberu	40.0
	b Baberu to Tindwari	19.1
	c Baberu to Atarra via Bisanda	33.0
	d Banda to Singhpur via Bisanda	35.0
(ii)	Minor roads -	135.8
	a Baberu to Augasi	15.2
	b Baberu to Oran	20.6
	c Baberu to Kamasin	22.0
	d Kamasin to Dandau Ghat	16.0
	e Baberu to Marka	22.0
	f Atarra to Oran via Chausad	20.0
	g Kamasin to Marka	20.0
(iii)	Village roads -	16.5
(D)	Total Pucca roads	175.17
(E)	Total Kachcha roads	260.03

(B) Road density :

The density of roads in tahsil Baberu exhibit local variation but not in a sharp manner. The density of roads in tahsil Baberu is directly affected with the uneven area, rivers and drainage of the study area. The per one hundred Square Kilometer area density of roads may be grouped into four categories as given below (Fig. 3.2A).

Table 3
Road Density Categories in Tahsil Baberu

Sl. No.	Road density in Km./ One hundred Square Km. of area	Road density categories
1	2	3
1.	10 and below	Rd _{VL}
2.	10 - 15	Rd _L
3.	15 - 20	Rd _M
4.	Above 20	Rd _H

Where : Rd₁ = Road density very low

Rd₂ = Road density low

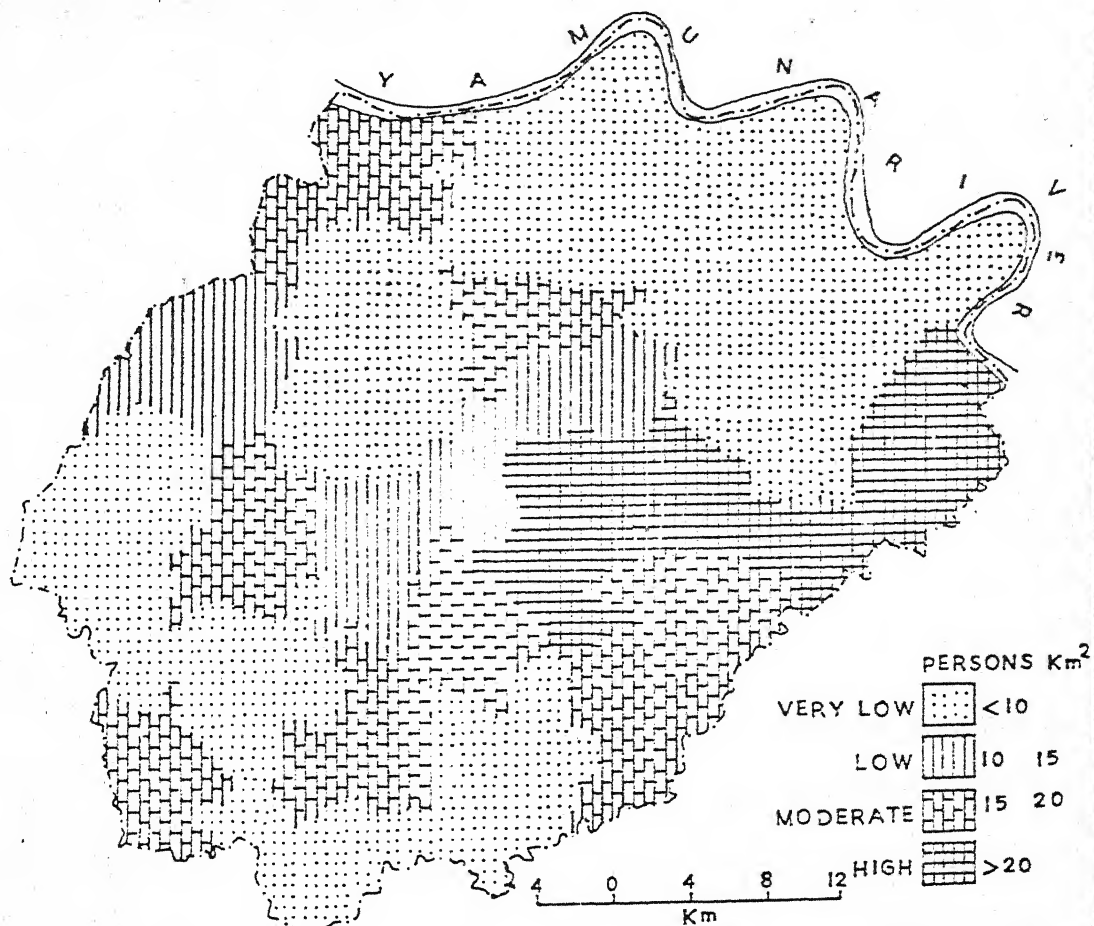
Rd₃ = Road density moderate

Rd₄ = Road density high

(1) Road categories :

The very low density of roads cover those areas which suffer from rugged and undulating topography and seasonal floods caused by the Ken, Bagain, Garara, Kalind, Ushra and other minor nallas which are almost unbridged. The nyaya panchayats of Bira, Narainpur, Kamasin, Audaha and Sunahuli in Kamasin block, Paras, in Baberu block and Chausad, Pawaiya and Singhpur in Bisanda block fall in this category of road density.

A BABERU TAHSIL ROAD DENSITY



B COMPOSITE PHYSICAL ACCESSIBILITY

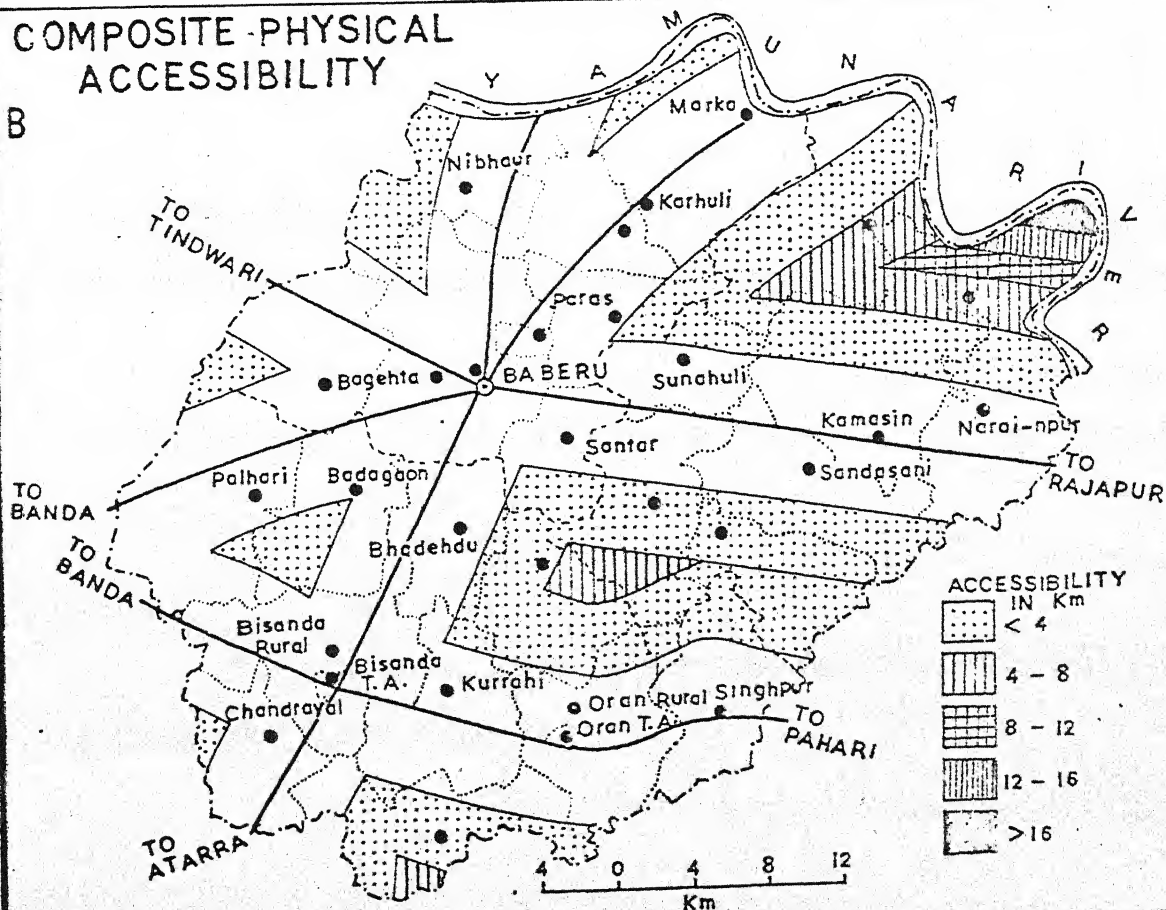


FIG-3.2

(ii) Rd_L category :

The low density category stretches over the areas covered by Nibhaur, Bhabhua, Karhuli Muafi, Palhari, Bagehta and Badagaon nyaya panchayats in Baberu block, Parsauli and Sanda- Sani in Kamasin block and Bhadehdu, Kurrahi and Oran Rural in Bisanda block. The main reasons of low density in these areas are the forests and major and minor rainy season Nalas which are almost with-out any bridge uneven level of land and floods.

(iii) Rd_M category :

This category cover the road dansity between 15 to 20 per one hundred Square Km. Bianda Rural and Chandrayal nyaya panchayats in Bisanda block and Santar nyaya panchayat in Baberu block are in this category.

(iv) Rd_N category :

This density covers such areas which exhibit 20 Km. per one hundred Square Km. or above. Only Harauli nyaya panchayat of Baberu block is in this category.

Thus the density of roads is comparatively higher in Baberu block. It is due to level surface and comparatively less physical barriers in road construction.

(C) Pressure of population on roads :

The following table shows the pressure of population on roads in tahsil Baberu-

Table 4

Road Density and Pressure of Population on Roads in Tahsil Baberu

S1 No.	Nyaya Panchayats / T.A.	Area in ² Km	Length of pucca Roads (in Km.)	Road density per one hundred Sq. Km. of area	Total popula- tion in 1931.	Pressure of popu- lation on roads
1	2	3	4	5	6	7
1.	Nibhaur	70.62	8.50	12.03	13194	1552.23
2.	Bhabhua	46.30	6.80	14.68	10699	1573.38
3.	Karnuli Muafi	94.78	12.10	12.76	17699	1461.90
4.	Paras	39.47	2.20	5.71	9993	4097.92
5.	Santar	39.54	7.30	18.46	9518	1303.83
6.	Hardauli	91.23	25.10	27.51	20503	916.85
7.	Bagehta	61.25	8.50	13.87	13646	1605.41
8.	Palhari	82.87	11.50	13.87	15782	1272.34
9.	Badagaon	58.64	6.00	10.23	11254	1875.66
Total Block Baberu -		583.70	88.00	15.07	121278	1378.15
10.	Audaha	96.17	2.51	2.60	15976	6364.94
11.	Bira	46.76	1.11	2.37	8185	7373.87
12.	Narainpur	65.99	-	-	12228	-
13.	Kamasin	96.13	4.32	4.49	16264	3764.81
14.	Sunahuli	42.41	3.49	8.22	7931	2243.83
15.	Parsauli	64.11	7.92	12.35	14745	1961.74
16.	Sanda Sani	64.66	7.65	11.93	13620	1780.39
17.	Chhilolar	52.63	-	-	11283	-
Total Block Kamasin		528.86	27.00	5.10	100132	3708.59
18.	Bhadehdu	44.65	5.61	12.56	12123	2160.96
19.	Bisanda Rural	94.83	12.75	15.03	12426	974.58
20.	Chandrayal	46179	7.05	15.06	11791	1672.48
21.	Chausad	64.92	3.20	4.92	17625	5507.81
22.	Kurrahi	57.61	6.10	10.58	19157	3140.49
23.	Pawaiya	47.32	3.14	6.63	12516	3985.98
24.	Oran Rural	55.93	6.90	12.33	12198	1767.82
25.	Singhpur	73.01	4.25	5.82	13293	3127.76
Total Block Bisanda		475.06	49.00	10.31	111129	2267.93
26.	Baburu T.A.	00.81	5.17	6.38	9695	1875.24
27.	Bisanda T.A.	00.36	3.00	2.77	7198	2399.33
28.	Oran T.A.	00.30	3.00	10.00	4147	1382.33
Total tahsil Baberu		1589.09	175.17	11.02	353579	2018.49

The pressure of population on per Km. road length in tahsil Baberu is very heavy i.e. 2013.49 persons which shows the inadequacy of roads. The pressure is the highest in the Bira Nyaya panchayat (7373.97 persons) in block Kamasin followed by the Audaha nyaya panchayat (6364.94 persons) in Kamasin block, Chausad (5507.81 persons), paras (4037.72 persons), Pawaiya (3985.98 persons), Kurrahi (3140.49 persons), Singhpur (3127.26 persons), Sunahuli (2243.93 persons), Bhadehdu (2160.96 persons), Oran Rural (1767.92 persons) nyaya panchayats in the tahsil Baberu. The main reason of this heavy pressure is insufficient number of roads in these areas due ^{to} physical obstructions.

The minimum pressure of population in the study area has been represented by the Hardauli nyaya panchayat (816.95 persons) in Baberu block followed by the Bisanda rural (974.58 persons) and Chandrayal (1672.48 persons) nyaya panchayat in Bisanda block and Bhabhua (1573.39 persons) and Nibhaur (1552.23 persons) nyaya panchayats in Baberu block. The reason behind less pressure of population on roads in these nyaya panchayats is the higher road density. The analysis of the pressure of population on roads shows that the physical barriers and the negligence of the P.W.D.

(E) Accessibility :

"Accessibility means the ease of contact with relatively little friction, that is less wastage in time and energy".³

Accessibility is the index of socio-economic development of a study area and it indicates the effectiveness of transport both as the cause and also as the result of over all development. It is

an essential factor in any expanding economy which adds considerably to the Man's material progress⁴.

Accessibility is a relative term. In the real sense, no place is absolutely inaccessible in tahsil Baberu. The areas beyond the reach of a road have been regarded to be inaccessible in terms of ease of contact. This is called the physical accessibility. The physical accessibility has been depicted in fig.3.2B. In which the isodromes of 4, 8, 12 and 16 Kms. have been drawn parallel to the roads to show the degree of their accessibility. The area within 8 Kms. has been considered to be accessible although it is influenced by the accessibility of alternative means of transportation. From the Fig. 3.2 B it is evident that the inaccessible patches lie either along the river sides or in the interior parts of the area. Table 5 shows the percentage of accessible and inaccessible areas in tahsil Baberu.

The accessible area which is within 8 Kms. is the highest in Chhilolar nyaya panchayat which accounts for 98.46 % of the total area and is followed by Pawaiya (68.13 %) Audaha (56.95 %) Parsauli (46.83 %) and Chausad (45.58 %) nyaya panchayats. About 92.76 % of the total geographical area is accessible and the rest 7.34 % is inaccessible due to rivers ravines and seasonal floods. The following table and Fig. 3.2 B shows the accessibility in different nyaya panchayats in the study area.

Table 5
Composite Physical Accessibility in Tahsil Baberu

Sl. No.	Nyaya Panchayats	Area in Km.	Below 4 Km.		4 to 8 Km.		9 to 12 Km.		12 to 16 Km.		Above 16 Km.	
			Area	%	Area	%	Area	%	Area	%	Area	%
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	Nibhaur	70.62	41.40	58.62	23.57	33.33	5.65	8.00	-	-	-	-
2.	Bhabhua	46.30	44.61	96.35	1.69	3.65	-	-	-	-	-	-
3.	Karhuli Musafi	94.79	77.75	82.03	17.03	17.97	-	-	-	-	-	-
4.	Paras	38.47	29.65	77.03	8.82	22.93	-	-	-	-	-	-
5.	Santar	39.54	26.80	67.78	12.74	32.22	-	-	-	-	-	-
6.	Hardauli	91.23	83.45	91.47	7.78	8.53	-	-	-	-	-	-
7.	Bagehta	61.25	53.05	86.62	8.20	13.38	-	-	-	-	-	-
8.	Palhari	82.87	77.40	93.40	5.47	6.60	-	-	-	-	-	-
9.	Badagaon	58.64	40.55	69.15	18.09	30.85	-	-	-	-	-	-
Total Block Baberu		583.70	474.66	81.32	103.39	17.72	5.65	0.96	-	-	-	-
10.	Audaha	96.17	19.05	19.90	54.67	56.85	22.45	23.35	-	-	-	-
11.	Bira	46.76	8.19	17.52	1.29	2.76	18.03	38.56	8.11	17.34	11.4	23.82
12.	Narainpur	65.99	46.00	69.71	19.99	30.29	-	-	-	-	-	-
13.	Kamasin	96.13	45.45	47.28	39.77	41.37	10.91	11.35	-	-	-	-
14.	Sumahuli	42.41	24.50	57.77	17.91	42.23	-	-	-	-	-	-
15.	Parsauli	64.11	23.57	36.76	30.02	46.93	10.52	16.41	-	-	-	-
16.	Sanda Sani	64.66	40.77	63.05	23.89	36.95	-	-	-	-	-	-
17.	Chhilolar	52.63	6.07	11.34	46.56	88.46	-	-	-	-	-	-
Total Block Kamasin		528.96	213.60	40.39	234.10	44.26	61.91	11.71	8.11	1.53	11.14	2.11

H1

1	2	3	4	5	6	7	8	9	10	11	12	13
18. Bhadehdu	44.65	39.70	33.91	4.95	11.09	-	-	-	-	-	-	-
19. Bisanda Rural	94.93	80.55	94.95	4.23	5.05	-	-	-	-	-	-	-
20. Chandrayal	46.79	39.70	34.95	7.09	15.15	-	-	-	-	-	-	-
21. Chausad	64.92	14.97	23.06	29.59	45.53	20.36	31.36	-	-	-	-	-
22. Kurrahi	57.61	46.15	30.11	11.46	19.89	-	-	-	-	-	-	-
23. Pawaiya	47.32	7.15	15.11	32.24	63.13	7.93	16.76	-	-	-	-	-
24. Oran Rural	55.93	55.93	51.75	92.5	4.13	7.47	-	-	-	-	-	-
25. Singhpur	73.01	53.30	79.95	14.71	20.15	-	-	-	-	-	-	-
Total Block Bisanda	475.06	339.27	71.20	10350	22.34	23.29	5.96	-	-	-	-	-
26. Baberu T.A.	0.31	0.31	100.00	-	-	-	-	-	-	-	-	-
27. Bisanda T.A.	0.36	0.36	100.00	-	-	-	-	-	-	-	-	-
28. Oran T.A.	0.30	0.30	100.00	-	-	-	-	-	-	-	-	-
Total Tahsil Baberu	1599.09	1023.00	64.69	445.99	23.07	95.95	6.03	3.11	0.51	11.14	0.70	

(E) Inaccessibility :

The inaccessible areas lie in Chausad, Audaha, Bira, Pawaiya, Parsauli, Kamesin, Kurrahi and Nibhaur nyaya panchayats. Bira nyaya panchayat exhibits the maximum inaccessible area which is about 92.61 % of its total geographical area. Bira nyaya panchayat has 33.56 % inaccessible area. To bring the areas within accessibility zone, the following measures should be taken-

- (1) All the seasonal roads should be converted into all weather¹¹² roads.
- (ii) All the Kachcha roads be metalled with immediate effect.
- (iii) Villages be connected with metalled roads by link roads.
- (iv) Due care be paid for the repairs of the roads which are in bad condition.

(F)Connectivity :

The transportation net work can be dealt as a series of vertices (nodes) and a set of edges (linkages) together with the relationship connecting each edge with two vertices. The degree of connection between edges is called connectivity.

The degree of transport linkage is directly related to the demand for transportation facilities and therefore it is indicative of the stage of development in the region. Taffee and Gauthier⁵ have explained connectivity with the help of two hypothetical net works. A hypothetical net work shown by Fig. 3.3 B indicates 7 edges and 8 nodes or vertices. Their relationship may be shown as below :

$$E = (V-1) = (8-1) = 7$$

The Gamma Index :

The ratio of actual number of edges to the maximum number of edges possible in a net work is indicated by the Gamma Index as under :

$$Y = \frac{e}{e \text{ Max}} = \frac{e}{3 (V-2)}$$

Where : e means edges (linkages) and
V means vertices (nodes).

In a net work connectivity varies from a set of vertices

having no inter connection at one extreme to a set of nodes in which every node has an edge connecting it to other nodes. The numerical value of Gamma Index is between 0 and 1 which may be expressed as a percentage of connectivity.

The tahsil Baberu which has been divided in three blocks represents the following degree of connectivity (See Fig. 3.3 A).

- (i) Baberu block, $y = 0.222$ or 22.2 %
- (ii) Bisanda block, $y = 0.222$ or 22.2 %
- (iii) Kamasin block, $y = 0.466$ or 46.6 %

Thus the results exhibit that Kamasin block is more complex than Baberu and Bisanda blocks. It indicates richness of transportation than other two blocks which are connected 22.2 % each. The two blocks are less connected because of seasonal rains.

(G) Traffic flow :

The traffic flow denotes interaction between different parts of the region. The greater the population of two centres the greater would be the interaction between them and vice-versa⁶. Therefore, it may be contended that the interaction expected between any two cities 'i' and 'j' may be measured on the basis of population of the two cities (P_i and P_j) and the distance between them (d_{ij}). The model for interaction could be as given below :

$$\text{interaction ratio between } ij = \frac{P_i P_j}{d_{ij}}$$

The interaction is the outcome of areal differentiation. Interaction occurs between two areas if there remains demand in one and supply in the other. Interchange takes place only after specific complementarity is achieved which is a function of areal differen-

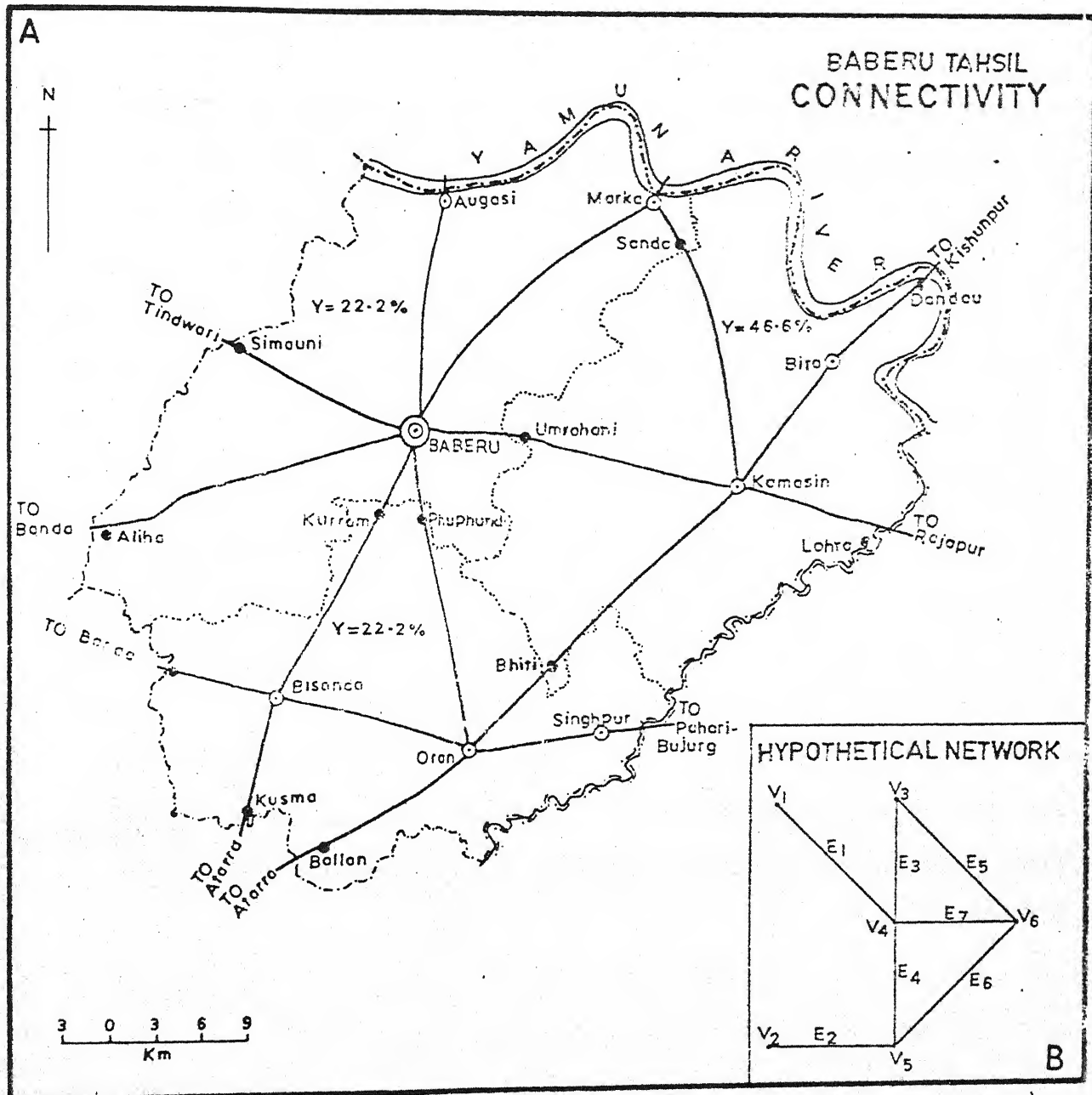


FIG-3-3

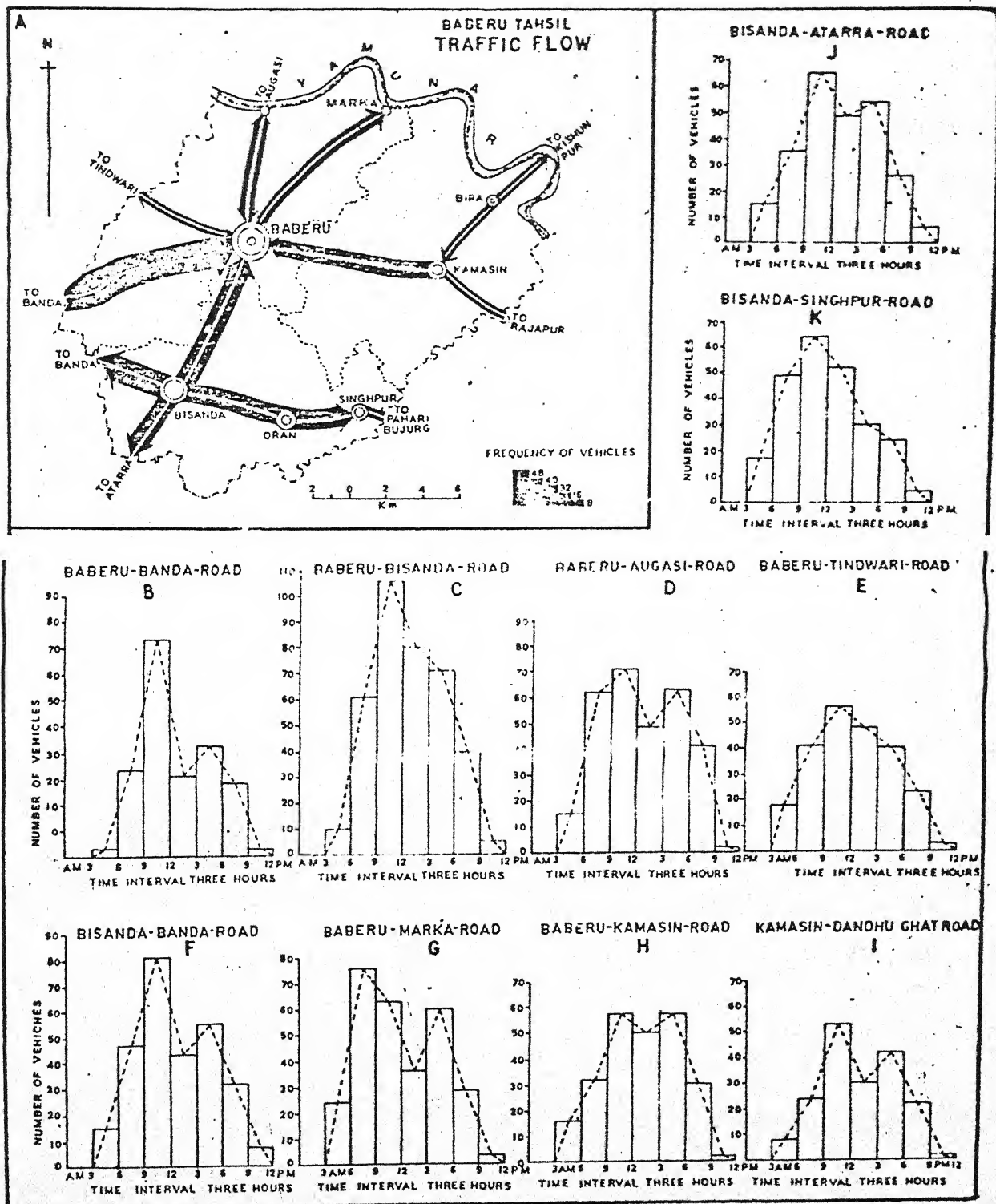


FIG. 3-4

tiation promoting spatial interaction⁷.

Distance is used for the measurement of the final factor of interaction system. If there is a greater distance between market areas and sources of supply, interaction could not succeed despite perfect complementarity and absence of intervening opportunity.

The passenger and freight are the significant heads of traffic flow as there are fundamental differences in the traffic carrying characteristics of the two. The study of passenger has been made by the buses flying on the motorable roads in the different parts of the area and in the same way freight traffic flow has been represented by the load carrying trucks and tractors (See fig. 3.4 A-K).

(H) Passenger traffic flow :

Buses are the main means of traffic flow in the tahsil Baberu. The main motorable roads on which buses fly are Banda - Baberu, Baberu-Bisanda, Baberu- Augasi, Baberu-Marka, Baberu-Kamasin and Baberu- Tindwari. Banda Baberu is the most important channel for passenger traffic flow. On this road 42 buses and 2200 passenger pass per day. The periodical analysis of the traffic flow exhibits that during 12 in the noon to 3 O'clock in the evening fly the maximum number of buses and the least frequency has been marked during 6 P.M. to 9 P.M. During 9 P.M. to 6 A.M. in the night there is no bus. During 6 A.M. to 12 in the noon the number of buses remains 3 to 9.

Cycle is another means of passenger flow. According to the survey performed by the author as much as 969 cycles pass per day from the roads. The maximum frequency of cycles has been marked during 9 to 12 in noon. The least frequency has been visualized during 9 to 12 in the night when the number of the cycles is only 3. The flow of different types of vehicles and passengers in individual roads during 24

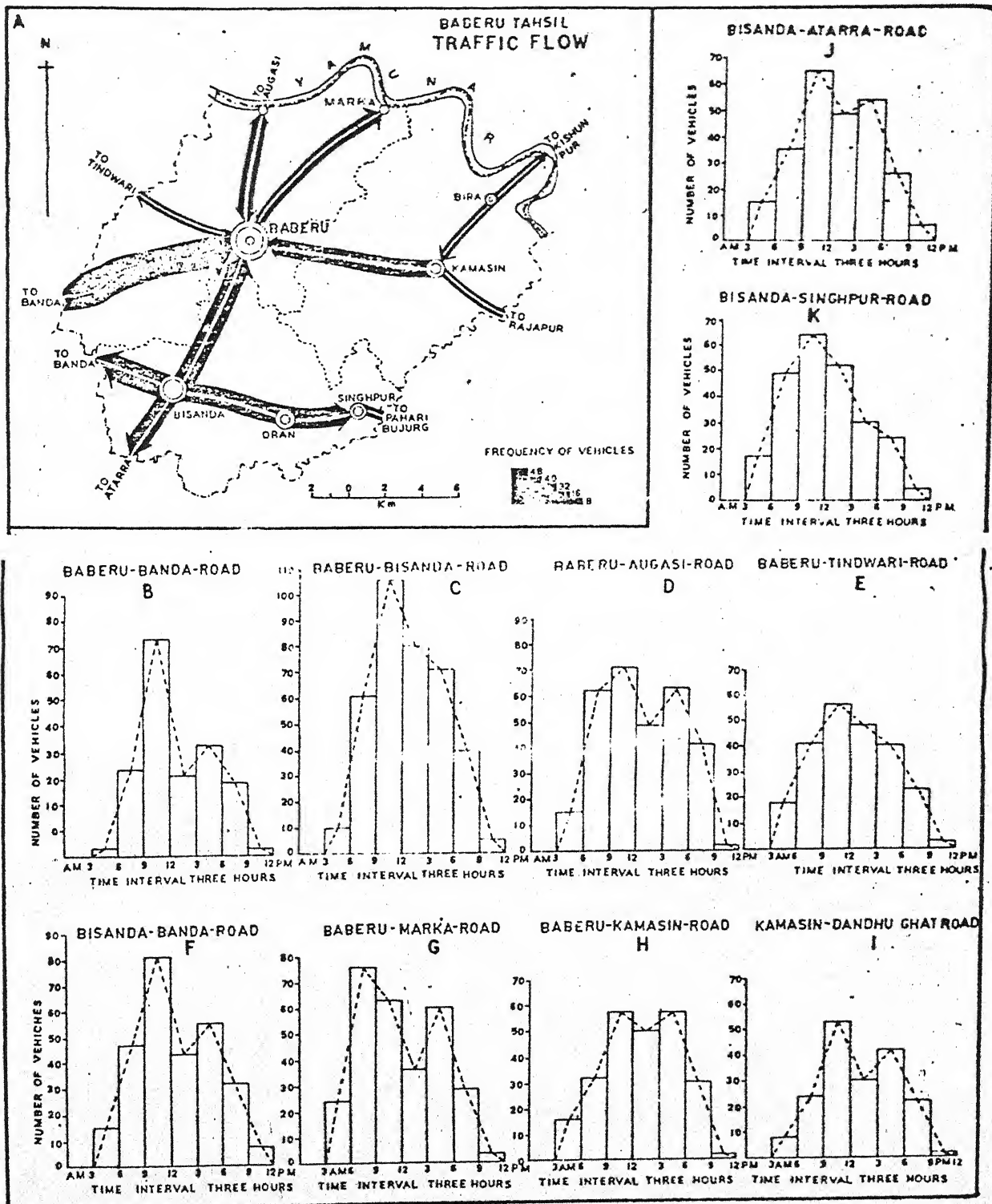


FIG. 3-4

hours has been depicted in table 6 and 7 be (See appendix III 1-5 and fig.3.5 A-J).

Table 6
Passenger Traffic Flow in Tahsil Baberu

Sl. No.	Roads	Distance	Total passengers	Total no. of buses	% of total buses	Total no. of cycles	% of total cycles	Total no. of bull-carts	% of total bull-carts	Total no. of trucks & tractors	% of total truck & tractors
1	2	3	4	5	6	7	8	9	10	11	12
1.	Banda-Babaru Road	40.00	2200	42	29.79	969	39.62	69	9.83	37	16.82
2.	Babaru-Bisanda Road	20.00	550	11	7.90	247	10.09	90	12.82	27	12.27
3.	Babaru-Augasi Road	15.2	234	5	3.55	209	8.55	69	9.83	20	9.09
4.	Babaru-Kamasin Road	22.0	1259	22	15.60	124	5.06	74	10.54	24	10.90
5.	Banda-Bisanda Road	32.0	1090	18	12.76	143	5.85	87	12.39	32	14.55
6.	Babaru-Marka Road	22.0	246	6	4.26	202	8.26	65	9.26	17	7.73
7.	Bisanda-Atarra Road	13.0	425	11	7.90	132	5.39	82	11.68	25	11.37
8.	Bisanda-Singhpur Road	23.0	518	18	12.76	108	4.42	88	12.54	26	11.82
9.	Babaru-Tindwari Road	19.1	258	4	2.84	172	7.03	46	6.55	7	3.18
10.	Kamasin-Dandau Ghat Road	16.0	215	4	2.84	140	5.73	32	4.56	5	2.27
Total		222.3	7285	141	100	2446	100	702	100	220	100

Source : Personal survey dt. June 9, 10 and 11, 1986.

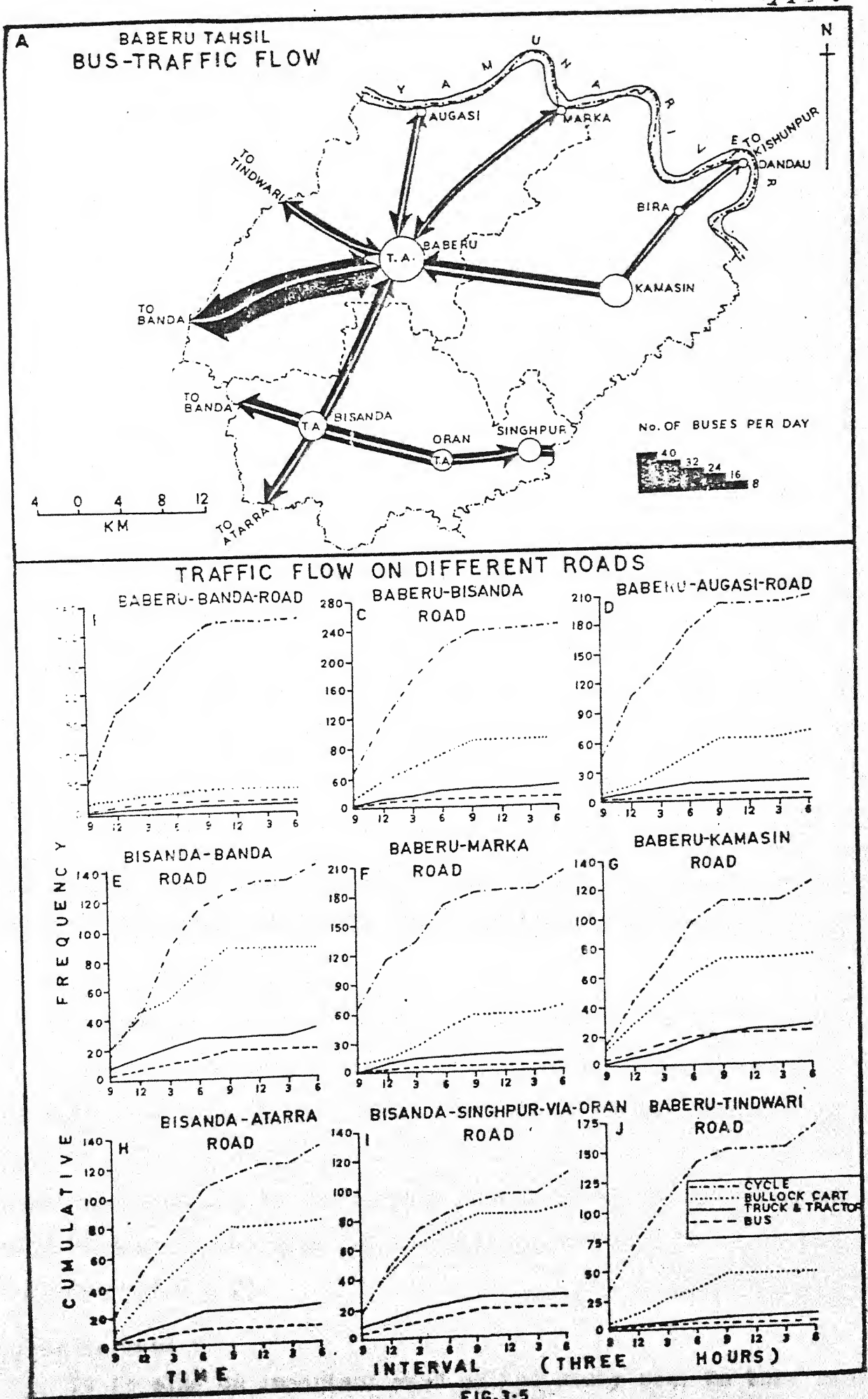


FIG.3-5

Table 7
Traffic Flow, Tahsil Baberu

Time Interval	Number of vehicles									
	Baberu Banda road	Baberu Bisanda road	Baberu Augasi road	Bisanda Banda road	Baberu Marka road	Baberu Kamasin road	Bisanda Atarra road	Bisanda Singhpur via Oran road	Baberu Tindwari	Kamasin Danda Ghat Road
1	2	3	4	5	6	7	8	9	10	11
12-3 a.m.	-	-	-	-	-	-	-	-	-	-
3-6	15	10	15	15	24	16	15	17	18	8
6-9	167	62	62	47	76	32	35	49	41	24
9-12	417	106	71	81	63	57	65	64	56	53
12-3 P.M.	154	80	49	43	36	50	49	52	48	30
3-6	213	73	63	55	60	57	54	30	40	42
6-9	140	39	41	32	28	30	26	24	23	22
9-12	11	5	2	7	3	2	6	4	3	2
Total	1117	375	303	290	290	244	250	240	229	181

Source : Personal Survey dt. June, 9, 10 and 11, 1986.

Banda-Singhpur via Bisanda road :

The number of buses running on this road is 18 in all which carry 1080 passengers to and fro. The period of 9 to 12 in the noon shows the maxima and the minima of bus flow can be marked during 6 to 9, 0'clock when there are only 3 buses. The total number of cycles passing through this road is 143 the maximum number of which can be marked during 9-12 0'clock in the noon and the minimum during 9 to 12 in the night (Appendix III.6 & 7).

Baberu- Kamasin road :

It is also an important road of the study area. On this road

22 buses carry the passengers. The period of 9 to 12 in the noon represents the maximum frequency of buses while that of 3-6 in the morning exhibits the least number of the buses. About 1259 persons pass over this road.

Cycles are another means of traffic flow on this road the total number of which is 124. The maximum number of bicycle can be marked during 9-12 in the noon while the minimum during 3-6 in the morning (Appendix III-9).

BABERU - Tindwari and Kamasin- Dandau Ghat road :

These are the seasonal roads which remain open for motorability only during summer. On these roads only four buses (two each road) pass per day carrying about 258 passengers.

Cycles are the means of traffic flow on these roads. As much as 172 cycles on Baberu Tindwari road and 140 cycles on Kamasin-Dandau Ghat road run daily (See Appendix III 9 & 10).

The above analysis of passenger traffic flow clarifies some common factors as :

- (i) The maxima of bus flow on each road is well marked during 9 in the morning to 12 in the noon while the minima during 6 in the evening to 9 in the night.
- (ii) Banda-Baberu road exhibits the maximum frequency in the tahsil because this road links the tahsil head quarter as well as the biggest town Baberu to Banda, the district head quarter.
- (iii) The flow on Baberu- Tindwari and Kamasin-Dandau Ghat roads has been restricted by the seasonality of roads as they are unmetalled road and barred by rainy season rains.

3.2 POWER :

For the agro-industrial development of rural areas the power

supply is sine-qua-non infrastructural facility. The rudimentary methods of our agricultural operations are to be replaced by the modern and efficient mechanical techniques. This is the demand of the hour. Without full fulfilling the demand we cannot think of our rural well being. For the popularization of modern mechanical implements power supply is definitely required. Therefore, the electrification of our remote villages is necessary. The discussion at hand starts with the survey of existing situation of power consumption by different categories, distribution of sub-stations and power lines and recommendations for future electrification of the villages.

(A) Electrification :

The present situation of rural electrification in tahsil Baberu is not satisfactory as only 75 but of 217 villages have been electrified till 1984. These are only 34.09 % of the total villages. The total number of electrified villages in Baberu block is 37, Kamasin block 20 and Bisanda block 18. The position of electrification in scheduled caste localities is 26 in Baberu block, 11 Bisanda block and 14 Kamasin block. Table 3 shows the block wise electrified villages, Harijan Basties and private tubewells.

Table 3
Block Wise Villages, Harijan Basties and Private Tube Wells
Electrified upto 31.3.84 in Tahsil Baberu.

Sl. No.	Block	Villages electrified		Harijan Basties electrified	P.T.W. electrified
		By C.E.A. definition	By L.T. main		
1	2	3	4	5	6
1.	Baberu	37	26	26	30
2.	Bisanda	18	13	11	50
3.	Kamasin	20	14	14	10
Total tahsil Baberu		75	53	51	90

Source : U.P.State electricity Board Office, Banda.

The historicity of electrification in this tahsil is very new. During March 1967 Baberu town area alongwith 3 neighbouring villages were electrified first. Since then a gradual annual progress can be marked in this tahsil. During 1968 and 1969 only 2 villages could be electrified. Till 1975 the progress of electrification has been very slow. The year 1976 marked nil electrification. Since 1977 till 1984 (accept 1979) the rate of electrification gained momentum. In 1982, the progress was phenomenal when 13 villages could be electrified which were about 6 % of the total villages. Table 9 shows the development of electrification in the study area (See fig. 3.6 A & B)

Table 9
Progress of electrification in Tahsil Baberu, 1967-84.

Sl. No.	Years	Total no.	% of electrified villages	Name of villages
1	2	3	4	5
1.	1967	9	4.09	Baberu, Achhah, Gadsan, Bisanda, Bhadehdu, Sathi, Kairi, Kurra Khurd, Kusma.
2.	1968	1	0.46	Korran
3.	1969	1	0.46	Punahur
4.	1970	5	2.27	Tharthua, Majhila, Arthara, Karhuli Musafi, Murwal.
5.	1971	2	0.91	Aliha, Kamasin
6.	1972	4	1.82	Bhabhua, Ahar, Oran, Bagha
7.	1973	1	0.46	Kalana
8.	1974	2	0.91	Gujaini, Singhpur
9.	1975	2	0.91	Mau, Chhilolar
10.	1976	-	-	-
11.	1977	6	2.73	Para, Pachhauhan, Musiwan, Bira, Itra Budhauri, Kharauri.
12.	1978	5	2.27	Hardauli, Augasi, Kurrehi, Sanda Sani, Gurauli Uparhar.
13.	1979	-	-	-
14.	1980	5	2.27	Ragauli, Anausa, Baghanda, Badagaon, Melathu.
15.	1981	3	1.36	Marka, Anwan, Rayan

1	2	3	4	5
16.	1982	13	5.90	Barauli Azam, Palhari, Mawai Zunnandan, Shive, Alampur, Rampurwa, Janwara, Daftra, Saya, Chandrayal, Banthari, Birraon, Bachhaundha Sani.
17.	1983	11	5.00	Jugrehli, Shamsuddinpur, Devarttha, Bagehta, Talakalan, Bankat, Sunahula, Sunahuli, Lakhanpur, Satnison, Dataura.
18.	1984	5	2.27	Resta, Simeuni, Pakhrauli, Marauli, Tarayan.
Total		75	34.09	

Source :U.P.State electricity Board Office, Banda.

In tahsil Baberu the total connections of various sectors of consumption are 1472. The sectorwise number of connections is 1066 in domestic, 98 non-domestic, 35 in street light, 81 in private tube-wells, 33ⁱⁿ state tube wells, 3 in lift irrigation, 83 in light industries, 34 in agricultures and 39 in others. The consumption of power in these sectors is 253.25 K.W. in domestic, 325.65 K.W. in non-domestic, 19.00 K.W. in street light, 535.00 H.P., in private tube wells, 680.00 H.P. in state tube wells, 1159 K.V.A. in lift irrigation, 594.50 K.W. in light industries 193 K.W. in agriculture and 255.70 K.W. in others. The blockwise distribution of electric connections is 484, 215 and 218 in Baberu, Bisanda and Kamasin respectively. The town area wise distribution of electric connection is 365, 142, 58 in Baberu, Bisanda and Oran town area respectively (Fig. no. 3.6 C). A comparative look of all the nyaya panchayats represents that the nyaya panchayats of Hardauli has the maximum number of electrified villages (5) While the minimum number is in the nyaya panchayats of Nibhaur, Pawaiya, Oran rural, Singhpur, Audaha, Bira and Chhilolar. The statement of electricity required by different sectors of consumptions in the tahsil Baberu has been given in the following table.

Table 10
Village wise Electricity Required under Different Heads in Tahsil
Baberu 1954-55
(In K.W.)

Sl No	Name of the cluster/ T.A.	Domestic		Non-domestic		Street Light		Private tube wells		State tube wells	
		Conn- ect- ion no.	Conn- ec- ted load	Conn- ec- tion no.	Conn- ec- ted load	Conn- ec- tion no.	Conn- ec- ted load	Conn- ec- tion no.	Conn- ec- ted load (in H.P.)	Conn- ec- tion no.	Conn- ec- ted load (in H.P.)
1	2	3	4	5	6	7	8	9	10	11	12
1.	N.P.Nibheur	5	2.10	1	5.00	-	-	-	-	-	-
	1.Augasi	5	2.10	1	5.00	-	-	-	-	3	60.00
2.	N.P.Bhabhua	10	3.90	-	-	-	-	-	-	2	40.00
	2.Bhabhua	8	3.15	-	-	-	-	-	-	1	20.00
	3.Shamsuddin- pur	2	0.75	-	-	-	-	-	-	-	-
3.	N.P.Karhuli Muafi	22	8.70	4	11.95	-	-	3	35.00	-	-
	4.Karhuli Muafi	10	3.20	1	2.35	-	-	2	20.00	-	-
	5.Kalana	3	1.50	1	1.50	-	-	1	15.00	-	-
	6.Marka	9	4.00	2	8.00	-	-	-	-	-	-
4.	N.P.Paras	12	4.60	1	5.00	-	-	7	55.00	-	-
	7.Majhila	5	2.00	1	5.00	-	-	-	-	-	-
	8.Arthara	5	2.10	-	-	-	-	4	32.50	-	-
	9.Gujaini	2	0.50	-	-	-	-	3	22.50	-	-
	10.Palmarauli	-	-	-	-	-	-	-	-	-	-
5.	N.P.Santar	7	2.80	-	-	-	-	-	-	1	20.00
	11.Rayan	2	0.80	-	-	-	-	-	-	-	-
	12.Anwan	5	2.00	-	-	-	-	-	-	-	-
6.	N.P.Hardauli	156	42.60	13	25.00	-	-	15	92.50	3	60.00
	13.Baberu	118	26.00	8	15.00	-	-	5	32.50	2	40.00
	14.Achhah	6	2.10	-	-	-	-	4	30.00	-	-
	15.Hardauli	24	10.00	5	10.00	-	-	5	20.00	-	-
	16.Jugrehli	6	2.80	-	-	-	-	-	-	1	20.00
	17.Tharthua	2	1.70	-	-	-	-	1	10.00	-	-

[illegible]

1	2	3	4	5	6	7	8	9	10	11	12
7.N.P.Bagehta		34	19.65	1	2.50	-	-	2	25.00	6	120.00
18.Ragauli		5	1.75	-	-	-	-	-	-	1	20.00
19.Anausa		1	0.75	-	-	-	-	-	-	1	20.00
20.Baghanda		2	1.20	-	-	-	-	-	-	-	-
21.Alampur		3	2.15	-	-	-	-	-	-	-	-
22.Deverttha		2	1.10	1	2.50	-	-	1	10.00	1	20.00
23.Bagehta		8	3.00	-	-	-	-	-	-	1	20.00
24.Simauni		7	5.00	-	-	-	-	-	15.00	-	-
25.Talakalan		6	3.70	-	-	-	-	-	-	2	40.00
8.N.P.Palhari		53	16.50	9	30.00	-	-	-	-	7	140.00
26.Murwal		25	6.00	4	10.00	-	-	-	-	2	40.00
27.Aliha		8	3.00	-	-	-	-	-	-	2	40.00
28.Palhari		15	5.00	5	20.00	-	-	-	-	1	20.00
29.Rampurwa		-	-	-	-	-	-	-	-	1	20.00
30.Pesta		3	1.50	-	-	-	-	-	-	-	-
31.Janwara		2	1.00	-	-	-	-	-	-	1	20.00
9.N.P.Badagaon		32	17.60	5	16.30	-	-	6	42.00	5	120.00
32.Ahar		5	2.50	1	3.50	-	-	1	15.00	2	50.00
33.Badagaon		8	4.00	1	2.80	-	-	1	15.00	2	50.00
34.Melathu		9	5.00	2	10.00	-	-	4	12.00	1	20.00
35.Barauli Azam		2	2.00	-	-	-	-	-	-	-	-
36.Mawai Junnardar		3	1.50	-	-	-	-	-	-	-	-
37.Shive		5	2.60	-	-	-	-	-	-	-	-
Total Block Baberu	331	117	45	33	95.65	-	-	33	249.50	25	520.00
10.N.P.Bhadehdu		12	5.30	-	-	-	-	5	43.00	-	-
38.Bhadehdu		3	1.25	-	-	-	-	4	35.50	-	-
39.Sathi		2	0.80	-	-	-	-	1	7.50	-	-
40.Kerram		1	0.75	-	-	-	-	-	-	-	-
41.Daftra		6	2.50	-	-	-	-	-	-	-	-

1	2	3	4	5	6	7	8	9	10	11	12
21.N.P.Kamasin	73	23.50	10	35.00	2	2.00	12	60.00	1	20.00	
60.Kamasin	58	20.00	10	35.00	2	2.00	10	50.00	-	-	
61.Pachhauhan	9	2.00	-	-	-	-	2	10.00	1	20.00	
62.Musiwan	6	1.50	-	-	-	-	-	-	-	-	
63.Bankat	-	-	-	-	-	-	-	-	-	-	
22.N.P.Sunahuli	12	4.90	1	2.50	-	-	-	-	1	20.00	
64.Gurauli Uperhar	2	1.35	-	-	-	-	-	-	-	-	
65.Sunahula	2	0.70	-	-	-	-	-	-	-	-	
66.Sunahuli	3	0.75	-	-	-	-	-	-	-	-	
67.Satniaon	5	2.00	1	2.50	-	-	-	-	1	20.00	
23.N.P.Parseauli	22	7.00	2	10.00	-	-	1	10.00	1	20.00	
68.Birraon	14	4.00	1	5.00	-	-	-	-	1	20.00	
69.Dataura	6	2.00	-	-	-	-	-	-	-	-	
70.Tarayan	2	1.00	1	5.00	-	-	1	10.00	-	-	
24.N.P.Sanda Sani	19	6.00	3	10.00	-	-	4	20.00	-	-	
71.Kharauli	7	3.00	-	-	-	-	-	-	-	-	
72.Banda Sani	2	0.50	-	-	-	-	-	-	-	-	
73.Banthari	8	2.00	2	5.00	-	-	4	20.00	-	-	
74.Bachhaundha Sani	2	0.50	1	5.00	-	-	-	-	-	-	
25.N.P.Chhilolar	5	1.25	1	5.00	-	-	2	10.00	-	-	
75.Chhilolar	5	1.25	1	5.00	-	-	2	10.00	-	-	
Total Block Kamasin	247	45.55	19	72.50	2	2.00	20	105.00	4	80.00	
Baberu Town area	296	40.00	24	90.00	25	10.00	-	-	-	-	
Bisanda Town area	115	20.00	8	25.00	6	5.00	-	-	-	-	
Oran Town area	46	10.00	4	10.00	2	2.00	-	-	-	-	
Total Town area	447	70.00	36	115.00	33	7.00	-	-	-	-	
Total tehsil Baberu	1066	299.35	99	325.65	35	19.00	31	553.00	33	690.00	

1	2	13	14	15	16	17	18	19	20	21	22
21.N.P.Kamasin	-	-	8	80.00	-	-	-	2	10.00	3	15.00
60.Kamasin	-	-	5	50.00	-	-	-	2	10.00	2	10.00
61.Pachhauhan	-	-	3	30.00	-	-	-	-	-	-	-
62.Musiwan	-	-	-	-	-	-	-	-	-	-	5.00
63.Bankat	-	-	-	-	-	-	-	-	-	-	-
22.N.P.Sunahuli	-	-	-	-	-	-	-	2	10.00	-	-
64.Surauli Uperhar	-	-	-	-	-	-	-	-	-	-	-
65.Sunahuli	-	-	-	-	-	-	-	1	5.00	-	-
66.Sunahuli	-	-	-	-	-	-	-	-	-	-	-
67.Satniaon	-	-	-	-	-	-	-	1	5.00	-	-
23.N.P.Parsauli	-	-	2	20.00	-	-	-	1	10.00	1	5.00
68.Birraon	-	-	2	20.00	-	-	-	1	10.00	1	5.00
69.Dataura	-	-	-	-	-	-	-	-	-	-	-
70.Tarayan	-	-	-	-	-	-	-	-	-	-	-
24.N.P.Sanda Sani	-	-	1	5.00	-	-	-	1	5.00	1	5.00
71.Kharauli	-	-	-	-	-	-	-	-	-	-	-
72.Sanda Sani	-	-	1	5.00	-	-	-	-	-	-	-
73.Banthari	-	-	-	-	-	-	-	1	5.00	-	-
74.Bachhaundha Sani	-	-	-	-	-	-	-	-	-	1	5.00
25.N.P.Chhilolar	-	-	-	-	-	-	-	1	5.00	1	5.00
75.Chhilolar	-	-	-	-	-	-	-	1	5.00	1	5.00
Total Block Kamasin	-	-	11	105.00	-	-	-	8	45.00	7	40.00
Baberu Town area	-	-	25	125.00	-	-	-	-	-	5	40.00
Bisanda Town area	-	-	10	40.00	-	-	-	-	-	3	14.00
Oran Town area	-	-	4	12.50	-	-	-	-	-	2	10.00
Total Town area	-	-	29	167.50	-	-	-	-	-	10	65.00
Total Tahsil Baberu	3	1159	83	594.50	-	-	-	34	183.00	39	255.70

Where : N.P. = Nyaya Panchayat,

T.A. = Town Area

Source : U.P.State Electricity Board Office, Banda, 1984-85.

To meet out the multi sector needs the power lines of various capacities have been erected in different parts of the tahsil. The 33 K.V. Line runs between Banda and Baberu, Baberu and Kamasin, Baberu and Samgarathe length of which ^{is} about 62 Kms. Baberu-Kamasin and Samgara are the 33 K.V. substations. The 11 K.V. power line runs between Banda and Baberu, Baberu and Augasi, Atarra and Baberu, Baberu and Kamasin, Baberu and Marks, Kamasin and Chhilolar, Kamasin and Bira, Birraon and Parsauli and Sunahula, Bhabhua and Mau, Baberu and Satniaon, Alampur and Melathu, Bisanda and Oran, Pahadi and Singhpur. The main substations of 11 K.V. power line are Koni, Parsauli, Bisanda, Baberu, Oran, Melathu, Murwal, Palhari, Mau, Karhuli Muafi, Augasi, Singhpur, Gadaon, Amawen, Kurrahi, Anwan, Gursuli, Tilausa, Lauhi Tika Mau and Chhilolar.

Among the various sectors of power consumption the industrial sector requires more power consumption than other sectors in the table 11 the power requirements of various industries has been given.

Table 11
Norms for Estimating Power Requirements of Industries

Sl. No.	Type of Industries	Capacity	Power in Kws.
1	2	3	4
1.	Rice Mill	2 Tonnes per day	7.46
2.	Oil Mill	2 Tonnes per day	7.46
3.	Flour Mill	1 Tonne per day	3.73
4.	Wood based furniture	20 Workers	20.00
5.	Wood based electric articles and scientific instruments	40 Workers	40.00
6.	Paper, News print	20 tonnes per day	1000.00
7.	Leather tanning	1 tonne per day	50.00
8.	Bone meal	1 tonne per day	10.00
9.	Milk Pasturization plant.	1000 Litter	165.00

Source : Norms used here have been collected from the techno economic survey reports of various states prepared by NCAER, New Delhi and SIET Institute, Hyderabad.

The previous analysis of the electrification in tahsil Baberu makes it clear that it is still very dissatisfactory as 34.09 % of total village is electrified. The progress of electrification is also of slow rate. For the acceleration of the pace of economic development and diversification of agricultural sector the power supply for all the villages is highly essential. It is desirable that for the balanced agro industrial development of the study area. Each and every village must be electrified so that the area may experience the impact of integrated area development soon and widely.

3.3 MAN POWER :

Spatial Distribution of population :

Tahsil Baberu being a part of trans Yamuna plain is almost uniformly populated with a few patches of sparse population due to alkaline soils ravines alongwith river courses, barren lands and lack of irrigational facilities. The nyaya panchayat wise distribution of population does not show very steep variation in the spatial distribution of population. The minimum population (7331 persons) is marked in Sunahuli nyaya panchayat which ranges to the highest population (20503 persons) in Hardaui nyaya panchayat of Baberu block. There are only four nyaya panchayats of Sunahuli, Bira, Paras and Santar which represent total population below 10,000. All other nyaya panchayats show there total population to be more than 10,000 persons (Fig. 3.7 Sec. Appendix III.11 & 12).

There are three town areas i.e. Baberu, Bisanda and Oran having their population of 9615, 7199 and 4147.

The density of population :

The study of population density indicates, the population pressure on local resources in any area. Therefore, the study of popu-

BABERU TAHSIL
DISTRIBUTION OF POPULATION
1981

EACH DOT REPRESENT 25 PERSONS

N

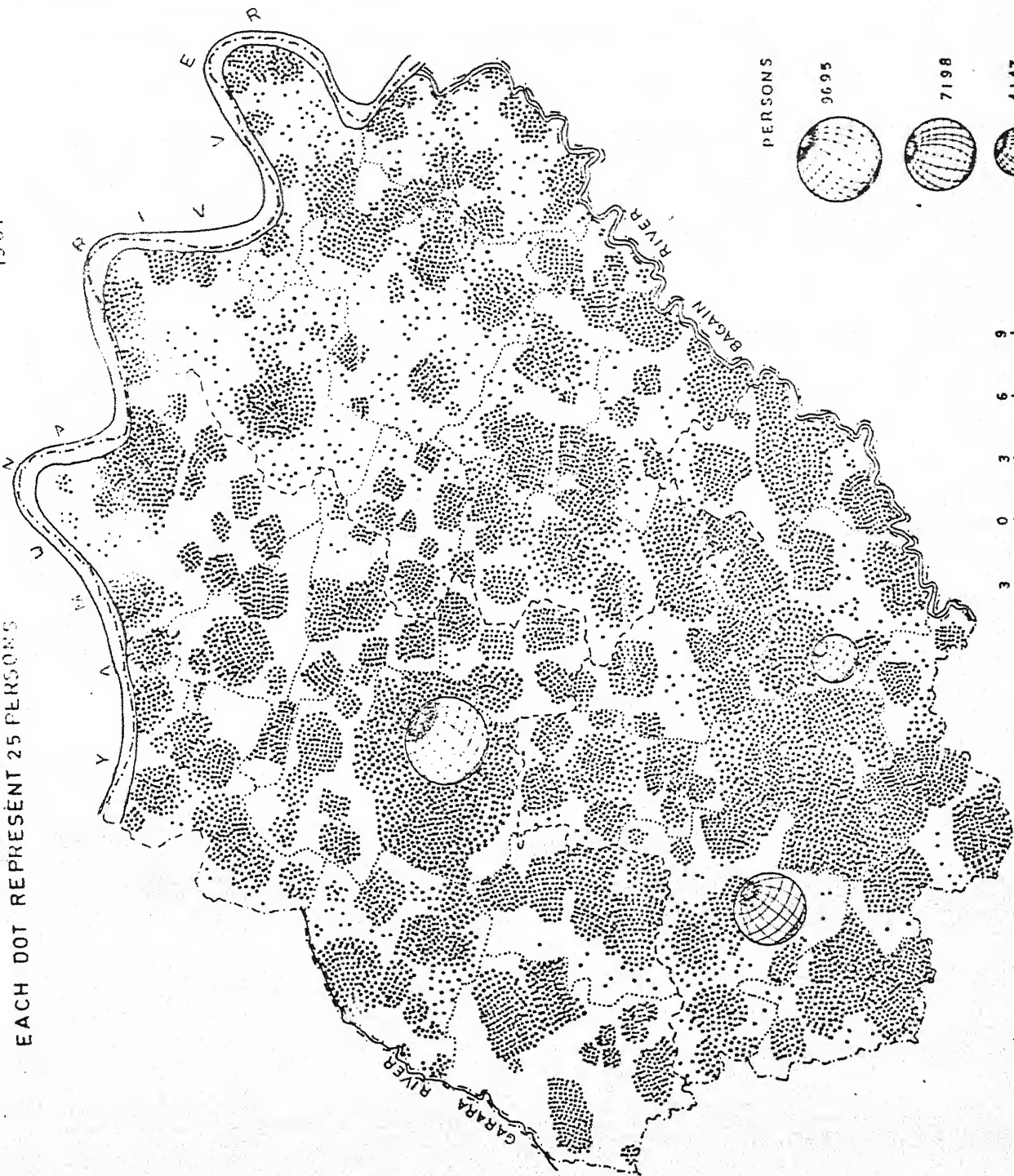


FIG. 3.7

lation density for the integrated development and micro level plan of an area becomes very important. The density of population in tahsil Baberu is 226 persons/Km². according to the census of 1981. Kurrahi nyaya panchayat represents the highest (342 persons Km²) population density i.e. 342 persons Km² and Bisanda nyaya panchayat the lowest (149 persons/Km²). The tahsil can be divided into five density categories as indicated below (See fig.3.8 A & Appendix III-13).

The area and density of population exhibit negative tendency of co-relation ($y = 25.11 + 0.16 X$ & $r = 0.031$)
Fig.no.3.8 B.

Table 12
The Density of Population in Tahsil Baberu, 1981.

Sl. No.	Categories (Persons/Km ²)	Nyaya Panchayats
1	2	3
1.	Below - 150	Bisanda Rural
2.	151 - 200	Singhpur, Palhari, Badagaon, Nibhaur Karhuli Muafi, Audaha, Kamasin, Narainpur Bira & Sunahuli.
3.	201 - 250	Oran, Hardauli, Bagehta, Santar, Bhabhua, Paras, Sanda Sani, Parsauli and Chhilolar.
4.	251 - 300	Chandrayal, Chausad, Bhadehdu and Pawaiya.
5.	Above - 300	Kurrahi, Baberu T.A., Bisanda T.A., Oran T.A.

Source : Census statistics collected from the Regional Office, Lucknow.

3.3 OCCUPATIONAL STRUCTURE OF POPULATION :

A very low percentage of working man power denotes a heavy reliance of population on active population. The working

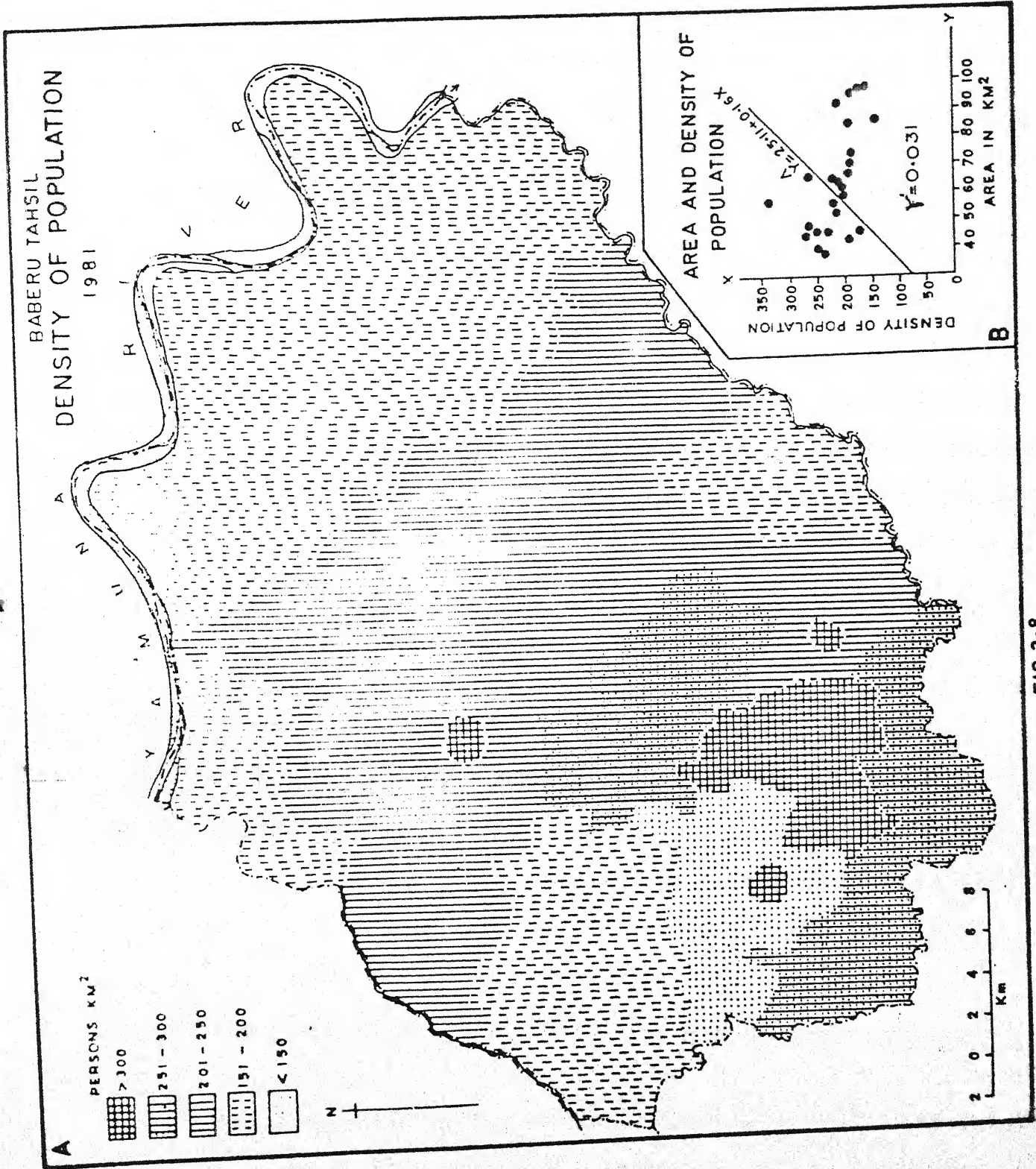


FIG.3-8

Population has been divided into four categories of occupation
i.e.

- (i) Agriculturists
- (ii) Agricultural labourers
- (iii) Family-Industry, production, Services, resource
and repairs; and
- (iv) Others

The percentage of agriculturists is the highest in each tahsil when compared to other categories of working population. The highest percentage of agricultural labourers has been marked in Chhilolar nyaya panchayat of Kamasin block. About 93.54 % workers are engaged in agricultural activities in tahsil Baberu. Oran rural nyaya panchayat of the Bisanda block, Nibhaur nyaya panchayat of the Baberu block and Sanda Sani nyaya panchayat of the Kamasin block also represent a high percentage of farmers which is 30 %, 73.13 % and 75.47 % respectively. The nyaya panchayats which represent relatively low percentage of farmers are Hardauli (54.02 %) in Baberu block, Chausad (55.12 %) in Bisanda block and Audaha (60.66 %) in Kamasin block all the nyaya panchayats have more than 50 % of farmers.

The agricultural labourers constitute the second most important category of working force. The nyaya panchayat of Chausad (39.60 %) Bisanda (38.06 %) and Singhpur (35.59 %) all in Bisanda block show the highest percentage of agricultural labourers. The areas which show the least percentage of this categories have been represented by the nyaya panchayats of Chhilolar (11.79%) Sanda Sani (13.74 %) and Bira (13.95 %) all in Kamasin block.

The third categories of occupational structure in tahsil
ru constitutes a very little percentage of working force. The

Sunahuli nyaya panchayat in Kamasin block is relatively much developed in family, Industry, production services and repairs. About 3.31 % of working population is under this category. This nyaya panchayat is followed by Bhabhua (2.95 %) in Baberu block palhari (2.38 %) in Baberu block and Kurrehi 2.74 % in Bisanda block. The least percentage has been represented by the nyaya panchayats of Nibhaur (0.64 %) in Baberu block, Bira (1.03 %) in Kamasin block and Bisanda (1.29 %) in Bisanda block. This percentage is higher in town areas. In Bisanda town area about 5.88 % of working force is engaged in the occupations under this category. Baberu and Oran town areas are at second and third places respectively (Fig. 3.9 A).

From the above discussion it becomes evident that the maximum percentage of working man power is engaged in farming activities. About 62.31 % of working force is directly employed in agricultural operations. About 29.20 % is working as farm labourers about 2.06 % of working population is per farming non-agricultural activities and the rest 5.93 % is engaged in various others activities. Thus, the population engaged in industry and other non-agricultural operations is very low in the tahsil Baberu. This sorry state of affairs is only due to favourable conditions for agriculture and lack of technical knowhow and enterprise in this tahsil (See Appendix III-14).

Working and non-working population :

The real working man power in tahsil Baberu is only 32.23 % with a percentage of 6.56 % as marginal workers. About 61.21 % is non-working force dependent on the working man power. In Singhpur nyaya panchayat the working force is the highest i.e. 39.25 % which is the highest in the study area. The lowest percentage of working force has been represented by Bagehta nyaya panchayat (26.63 %) (See Appendix

BABERU TAHSIL OCCUPATIONAL STRUCTURE OF POPULATION 1981

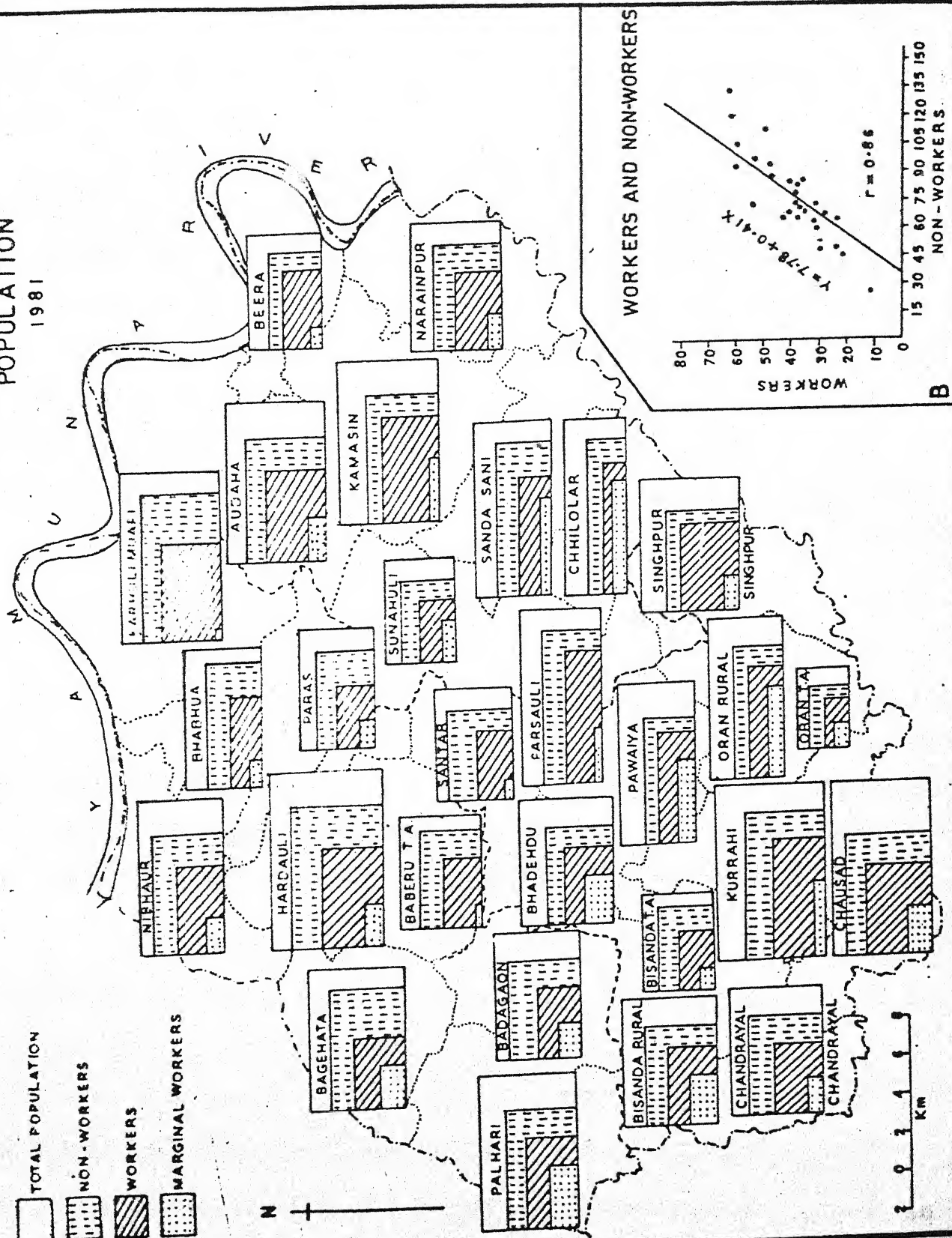


FIG.3-9

III-15). The regression relationship between the workers and non-workers show a positive tendency ($y = 7.73 + 0.41 X$ & $r = 0.96$)

Fig. no. 3.9 B.

Industrial Man Power :

As discussed previously agriculture is the main economic activity of the tahsil of Baberu. It is not because of high development in agricultural sector but it is because of less development of industries and other economic sectors. It is evident from the fact that 0.203 % of the total man power and 0.64 % of the total working force is engaged in industrial operations. This fact denotes the deplorable condition of industrial development of the tahsil. This backwardness can be attributed to the lack of awareness, entrepreneurship and technical know how among the masses. However, the nodal points of the study area have shown the sign of industrial dawning. Baberu, Bisanda and Oran town areas are such examples. Baberu town area ranks first providing an employment to 2.167 % of total man power and 5.47 % of its total working force. Oran town area stands second in the order of industrial development with an employment of 2.57 % of its working man power. The Industrial units and man power show a positive co-relationship ($y = 6.32 + 0.25 X$ & $r = 0.72$) Fig. no. 3.10 B.

Bisanda town area exhibits 2.47 % of its working man power engaged in industrial activity. Except the three centres none of the 25 nyaya panchayats show industrial population more than 1 %. The nyaya panchayats of Paras, Kamasin, Sunahuli, Bhabhua, Bisanda, represent more than 0.5 % but less than 1 % of working force engaged in industrial activities. The position of industrial employment in tahsil Baberu has been depicted in fig. 3.10 A & 3.10 B and table 13.

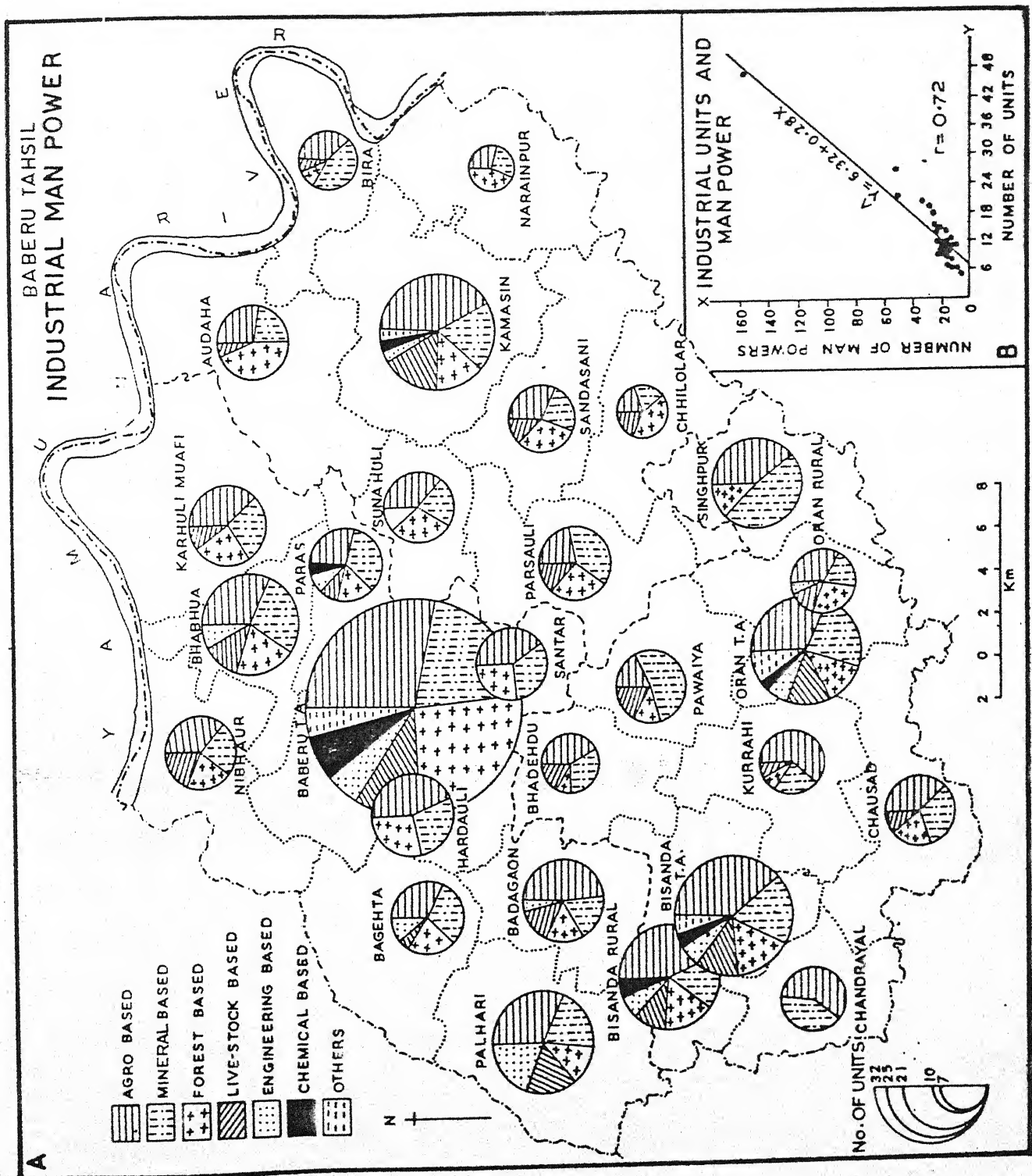


Table 13
Statement of Employment in Various Industry- Groups in Tahsil Baberu,
1994-95.

Sl. no.	Name of nyaya panchayats/ T.A.	Agro based Industries	Mineral based Industry	Forest based Industry	Live Stock based Industry	Engineering based Industry	Chemical based Industry	Other Industry	Total of Industries	% of Industrial man power to working man power
1	2	3	4	5	6	7	8	9	10	11
1.	Baberu T.A.	45	32	40	15	8	10	6	156	5.47
2.	Bisanda T.A.	20	10	8	6	3	2	3	52	2.47
3.	Oran T.A.	10	8	4	4	2	1	3	32	2.57
4.	Nibhaur	7	5	4	4	-	-	-	20	0.49
5.	Bhabhua	8	7	5	3	2	-	-	25	0.64
6.	Karhuli Muafi	8	6	5	2	-	-	-	21	0.36
7.	Paras	7	8	6	2	1	-	-	24	0.98
8.	Santar	6	5	4	-	-	-	-	15	0.52
9.	Hardauli	9	6	6	-	-	-	-	21	0.33
10.	Bagehta	6	6	4	1	2	-	-	19	0.53
11.	Palhari	8	5	3	4	5	-	-	25	0.51
12.	Badageon	10	4	3	3	1	-	-	21	0.65
13.	Bhadendu S	5	4	1	2	-	-	-	2	0.32
14.	Bisanda Rural	12	5	4	3	2	2	-	28	0.73
15.	Chandrayal	9	6	-	-	-	-	-	15	0.39
16.	Chausad	6	5	3	2	-	-	-	16	0.27
17.	Kurrahi	8	3	1	1	-	-	-	13	0.21
18.	Pawaiya	3	9	2	3	-	-	-	17	0.39
19.	Oran Rural	5	3	4	2	1	-	-	15	0.37
20.	Singhpur	9	11	3	-	-	-	-	23	0.44

1	2	3	4	5	6	7	8	9	10	11
21. Audaha		5	4	8	1	-	-	-	18	0.34
22. Bira		4	5	1	1	-	-	-	11	0.36
23. Narainpur		2	2	3	-	-	-	-	7	0.18
24. Kamasin		21	10	7	8	2	1	2	51	0.93
25. Sunahuli		6	4	5	2	-	-	-	17	0.71
26. Sanda Sani		5	4	5	2	-	-	-	16	0.41
27. Chhilolar		2	2	4	2	-	-	-	10	0.32
28. Parsauli		4	7	5	3	-	-	-	19	0.39
Total		250	196	149	76	29	16	14	719	0.64

Source : District Industry Centre, Banda.

Literacy :

Lack of optimum industrialisation can be attributed to very low percentage of literacy in this tahsil. About 20.03 % of total population is literate out of which 17.68 % are male and 2.40 % are female. Among the 25 nyaya panchayats of the study area Paras in Baberu block has the highest number of literates i.e. 25.86 %, which is followed by Parsauli (25.66 %). Bhabhua (22.90 %), Hardauli (22.79 %), Palhari (22.07%) and Bisanda (21.92 %). The least number of literates has been reported by the Oran nyaya panchayat (14.32 %) which is followed by Chhilolar (15.17%) Kurrahi (15.68 %) and Pawaiya (15.92 %) etc.

The highest literacy among males has been marked in Paras and Parsauli nyaya panchayats showing 22.28 % each. The least percentage of literacy among male has been found in Kurrahi (14.07 %), Kamasin (14.03 %) and Pawaiya (14.44 %) nyaya panchayats.

The female literacy is the highest in Paras nyaya panchayat which is 3.58 %. It is followed by Hardauli (3.46 %), Parsauli (3.38 %) and

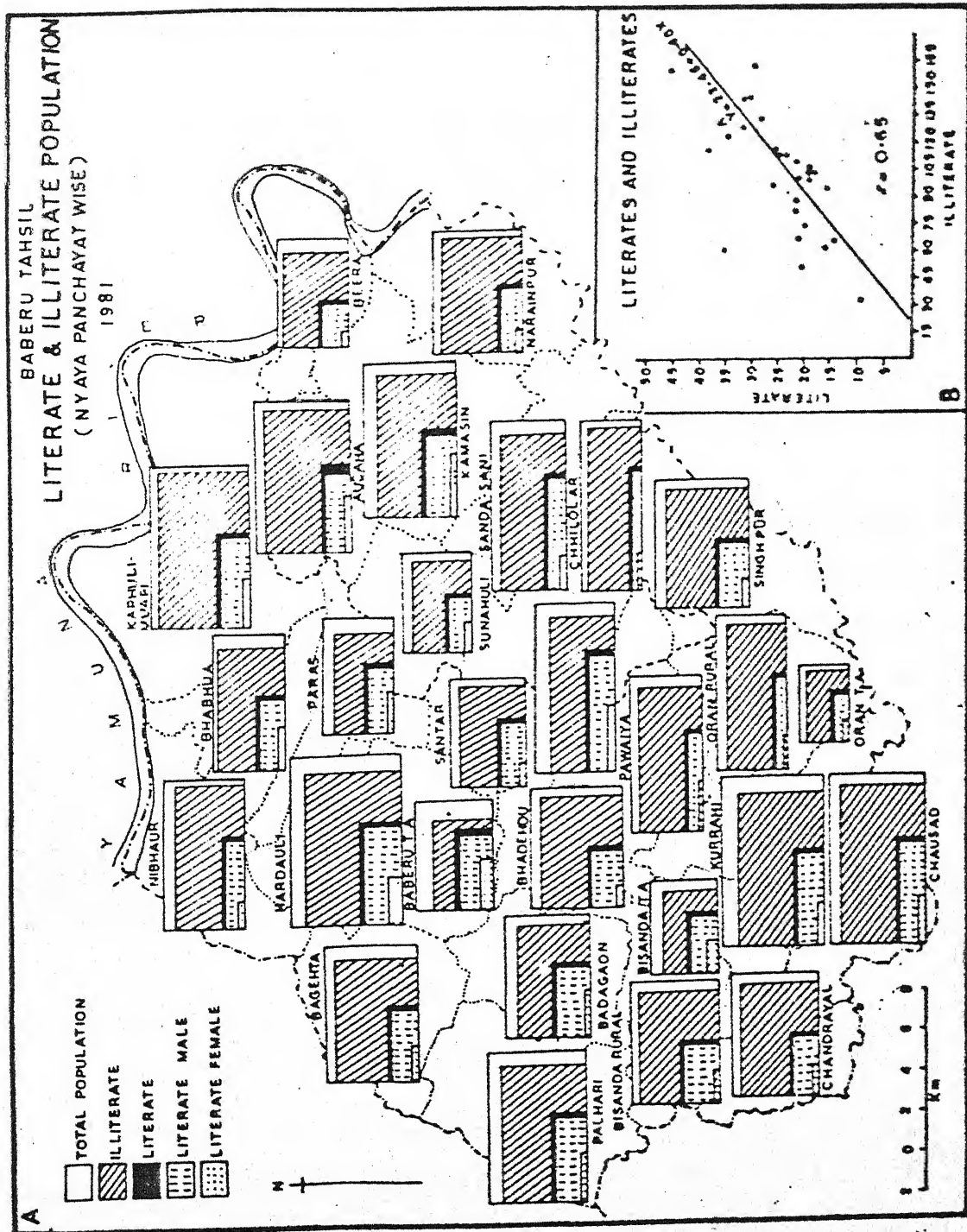


FIG. 3-11

Sunahuli (3.05 %) nyaya panchayats. The lowest percentage has been shown by Badagaon 0.98 % nyaya panchayat (See Fig. 3.11 A). The literates and illiterates exhibit positive co-relationship ($y = 22.44 + 0.40 x$ & $r = 0.65$) Fig. no. 3.11 B.

The literacy, in town areas, is relatively higher than rural areas. Baberu town area represents the highest percentage i.e. 37.69 % followed by Bisanda (29.48 %) and Oran (22.01 %) town areas. The percentage of female literacy is also higher in town areas. In Baberu town area 9.08 % of women are literates. It is followed by Bisanda (6.61 %) and Oran (3.83 %) town areas (Appendix III-16 & 17).

From the above discussion it becomes clear that the illiteracy^{is} the main obstacle in the alround development of tahsil Baberu. The severe poverty, old traditions and customs and other social constraints are the obstacles in the propogation of literacy and education in this tahsil.

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C H A P T E R - F O U R

S E R V I C E S T R U C T U R E

4.1 EDUCATION :

Man is the best resource therefore, the development of this resource must be the prime objective of any sort of resource development planning. Education is the prime and most important factor to be developed. It is also important for achieving the objective^{of} rapid economic growth and increating a social order based on social justice, freedom, equality and fraternity. Education is the main means to develop the feeling of nationality and citizenship and harness the energy of the people in developing the natural as well as human resources, specially in rural areas. This was the very reason that Mahatma Gandhi emphasised the Basic and vocational education.

The analysis of the educational policies at national and local level exhibit that they have not able to generate employment opportunity to vast man power of the rural India. Our education has been unrealistic and unrelated to the requirements of regional and individual life. It is pains giving that the product of the our educated have choiced the 'genteel' job in town and city areas and have not stayedⁱⁿ the rural surroundings. It is again pains giving that the greater part of our rural masses lives in the dark of ghastliness and isolistics. Our new education policies is making an experiment^{this} in^{direction}.

The position of education in the remote past is very much obscure. It can be traced back only since 1956 when about 135 schools where teaching arabic, Sanskrit and Persian to about 1100 school boys in the same year. Tahsil schools were opened at Baberu and Kamasin¹, since 1956 down to the end of 19 century. The number of schools has been showing fluctuating trendency. During the begining of 20th century

town schools at Baberu and Kamasin were opened. It can also^{be} traced that female education could be started only during the beginning of 20 century with the establishment of a girls school run by the district board².

It is obvious from the above discussion that the educational facilities in the tahsil were quite negligible. It is more clear from the fact that only 1.8 % of the total population of Banda district was educated, which included only 3 womenⁱⁿ 1872. In 1881 about 4.9 % of the males and .04 % of the females were recorded as literates. This percentage rose to 5.8 % and 0.03 % in 1901. The situation continued and the percentage went to 6.1 % and .11 % respectively. It is worth nothing that the mohammedans were more in number than Hindus as regards the male Hindu literates.

The actual development in education facilities in the tahsil started after the independence. During this period several primary and Junior high schools were opened in the study area.

At present the literacy has gone to 20.08 % in the study area which is a unsatisfactory condition. The proportion of male and female literacy is 17.68 % and 2.40 %. When examined the literacy of male population it accounts for 32.99 % as compared to female literacy which is 5.17 %. This statement clarifies that the education female is highly backward and has been neglected since past.

The education^{-al} facilities according to the records of the District Inspector of school and Basic Shiksha Adhikari, Banda have been discussed in the following lines. The total number of primary schools is 269 out of which 210 boys and 59 are girls schools. The block wise distribution of primary schools is 103 in Baberu block, 86 in Kamasin block and 80 in Bisanda block. In comprison to the primary schools the number of junior high school is very low. They are only 63 in the tahsil

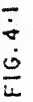
The block wise distribution of junior high schools is 14 (10 boys and 4 girls) in Baberu block, 12 (11 boys and 1 girl) in Bisanda block and 9 (8 boys and 1 girl) in Kamasin block. In comparison to the blockwise Junior High Schools (boys and girls schools) the number of high schools is only 3 where as that of intermediate colleges is only 5. The institutions of higher education and other educational facilities are nil. The following table shows the number of educational institutions of various level and enrolment of students (fig.4.1 A).

Table 1
Educational Facilities in Tahsil Baberu, 1982

Sl. no.	Standards	Classes	Age group	Number of schools colleges			Number of students enrolled		
				Boys	Girls	Total	Boys	Girls	Total
1	2	3	4	5	6	7	8	9	10
1. Primary school		I - V	6-10	210	59	269	29091	10894	39985
2. Junior high school		VI - VIII	11-13	56	12	68	4616	831	5447
3. High School		VI - X	11-15	3	-	3	733	5	738
4. Intermediate school		VI -XII	11-17	5	-	5	4610	64	4674
5. Graduate/Post-Graduate College		-	-	-	-	-	-	-	-
Total		-	-	274	71	345	39050	11794	50844

Source : D.I.O.S. and B.S.A. Office, Banda.

An analysis of the above table clarified that the situation of primary schools is quite satisfactory as almost every village of the tahsil has a primary school run by the district board. However, they require considerable improvement in their number and condition. The position of junior high schools is worse than primary ones as they attract lesser number of students as compared to the primary schools



due to the problems of drop outs at primary stage. The per unit number of students served by the high schools is greater than the primary and junior high schools. The average per unit number of students in primary, junior high school, high school and intermediate college is 148, 80, 246 and 934.80 which denotes the greater concentration of students in high schools due to their insufficient number.

Table 1 denotes that the enrolment decreases gradually from primary to junior high school and this process continues upto the intermediate standard. This phenomenon justifies the heavy number of drop outs. This was not mainly because of detentions of students by their parents but also due to the paucity of educational facilities within a reasonable circumference from the villages of such students poverty in the another important reason. Thus, to minimise the cases of drop outs the optimum distribution of educational facilities of different standards is highly required,

To know the quality of available education in the study area, the teacher- taught ratio has been utilized. Atleast 1 teacher for 1 class at primary level is invariably required. The students and teachers exhibit positive correlation ($r = 0.99$) Fig. no. 4.2 c. The present situation in the study area exhibits an acute shortage of teachers at the primary level which is about 56.26 %. To fulfil the target set by the Indian Prime Minister Shri Rajiv Gandhi, Universalisation of primary education both for Boys and Girls has been given the top priority. For the fulfilment of this goal the removal of the shortage of teachers shall be necessary. The following table depicts the average number of students in various levels of classes, The average population served by them, the number of the teachers per school and per class in the study area. The regression relationship between the teachers and educational institutions shows a negative tendency ($r = 0.16$ & Fig. no. 4.1 B)

Table 2
Teacher-Tought Ratio and Population Served by the Schools in
Tahsil Baberu, 1982.

Sl. No.	Standard	Average class size	Average population on served by each unit.	Number of teachers per school	Number of teachers per classes
1	2	3	4	5	6
1. Primary school		29	1314	2.91	0.53
2. Junior High school		53	5199	4.47	1.46
3. High School		49	117859	9.00	1.80
4. Intermediate School		133	70715	25.60	3.65
5. Degree College		-	-	-	-

Source : Data collected from D.I.O.S. and B.S.A. Office, Banda.

The analysis of the above table makes it clear that the number of schools at various levels is quite insufficient to meet out the regional requirements. Therefore, the study area requires more schools of various levels at suitable locations. Besides, the small and unhealthy size of old schools must be enlarged both in terms of accommodation and number of teachers. It is worth noting that in town areas many primary schools are being run by private agencies, the number of which is as much as 31. They must be provided proper accommodation as soon as possible :

(i) Increasing the fundamentals of schools :

For the universalisation of the primary education it has been suggested that a primary school must not be beyond 1.5 Kms. walk and junior high school must serve an area of 3 Kms. from its centre.

As discussed earlier, the number of schools is not satis-

factory. However, the present primary, Junior high school etc. serve their surrounding areas. A primary school on an average serves about 1214 persons of its adjacent villages. The average enrolment in these schools is not more than 150 and the average size of a class is constituted by 29 students. A junior high school though serve a greater segment of population its enrolment is less than a primary school. A high schools serves much bigger portion of population in the study area and enroll about 250 students having a class size of 50 boys. An intermediate college commands more area and population than any school below its level. The following table shows the size of various level schools and regional population served by them.

Table 3
Average no. of students Class size and population served in
Tahsil Baberu, 1992

Sl. no.	Standards	Average number of students.	Average class size	Average population served by each unit
1	2	3	4	5
1.	Primary school	148	29	1314
2.	Junior high school	90	26	5199
3.	High school	246	49	117959
4.	Intermediate college	934	133	70715
5.	Degree college	-	-	-

Source : Data collected from D.I.O.S. & B.S.A. Office, Banda.

In the study area the elementary education is suffering from the problems of insufficient teachers and class rooms. It is ridiculous as there is not even one teacher for one class in the primary schools of the area. This situation of class rooms is also the same as that of teachers. The average number of rooms in a primary school is three. It means that the combined classes are arranged in these schools. The teacher and class room ratio has been given in the follo-

wing table :

Table 4
Teacher and class Room Ratio in Tahsil Baberu, 1992.

Sl. No.	Standard	Number of teachers per school	Number of teachers per class	Number of class room per school	Room per class
1	2	3	4	5	6
1. Primary school		2.91	0.58	3.00	0.60
2. Junior high school		4.47	1.46	3.00	1.00
3. High school		9.00	1.90	5.22	1.04
4. Intermediate school		25.60	3.65	10.50	1.50
5. Degree college		-	-	-	-

Source : Data collected from D.I.O.S. & B.S.A. Office, Banda.

It is evident from the above table that the number of teachers in primary and high schools for one class is less than the minimum requirement, therefore, such schools require an immediate increase in the number of teachers in the institutions of both the standards. At the high school level three teachers for one class are minimally required to teach five subjects of the curriculum.

(ii) Repairing of school buildings :

The old school buildings have been damaged by the rains therefore, their condition has become unhealthy to maintain the buildings. The district board started a programme of repairing the damaged buildings. Under this programme About 175 schools were targeted with an investment of Rs. 18.6 lakhs in these buildings. The repairing work has been completed in 1992.

(iii) Provision of accessories :

The primary and junior high schools are suffering from insufficient accessories like tat patti, furniture, black board etc. It

is hoped that a grant of Rs. 2,000 will be provided to each institution at primary and junior high school level to purchase these items.

According to the VIIIth Five Year Plan a provision of scientific operatus, scholarship for scheduled caste, scheduled tribe and backward classes, merit scholar-ships, efficiency awards, the provision of text books for weaker students and formal education for drop outs and illiterate shall be made.

(iv) Future Plan :

According to the present growth of population it is estimated that the number of students in various level schools shall reach to the double of the present number till 2001 therefore, it will be necessary to open more schools of various levels and appoint more teachers there in. The following table gives the projected number of students, schools and teachers in 2001.

The following formula (Homer and Rogoff) has been applied to calculate the annual growth of students in the schools of various level according to the annual growth of population and the requirement of schools and teachers has been projected as shown in table mentioned below :

$$\text{Formula : } \bar{r} = \frac{(P_2 - P_1) / I_t}{(P_2 - P_1)^2} \times 100$$

Where \bar{r} is the annual growth rate,

P_1 is population of the village at one time,

P_2 is population of the village at another time,

It is the time interval between P_2 and P_1 .

Table 5
Projected Number of Schools Students and Teachers in 2001.

Sl. No.	Standards	Class	Number of schools/ colleges	Student enrolled	Number of teachers
1	2	3	4	5	6
1. Primary school		I - V	361	53628	1072
2. Junior high school		VI- VIII	116	18629	517
3. High school		VI -X	7	1318	49
4. Intermediate college		VI -XII	9	9560	237
5. Under post-graduate college		XIII-XIV	1	500	12

Source : Data collected from D.I.O.S. &B.S.A. Office, Banda.

Besides these schools, in formal and distant education technology will also be required for the illiterates and drop outs. Adult education and night schooling will also be activised to develop sincerity and devotion in each villager of the tahsil. It is hoped that during the VIIth plan the distant education technology in the from of radio, Vedeo and television will be brought to the knowledge and reach of the common people of the study area.

4.2 TECHNICAL AND EXTENSION SERVICES :

Technical and extension services are of the most important for the dissemination of useful information and technical innervations in the rural setting. To make the technical researches and technical services within the reach of rural segment of population the interest has been taken by the extension agencies and local officers as block development officers, Assistant development officers and village development officers. The block offices can help the block farmers in adopting the latest techniques of ploughing, seeding and harvesting

and various modern practices for increasing crops production by extension services. They can also be instrumental in providing high yielding variety seeds and improved mechanical aids to the farmers and also can provide repairing facilities and other technical helps. If the quality of block officers is good, no doubt, it can be the hub of all development activities in the rural areas. The real development can only be achieved by propaganda training the farmers to adopt modern technical methods of agriculture and use high yielding and improved seeds for increasing the farm productivity. Therefore, the role of technical and extension services is of great significance.

The advertisement and publicity of new farming techniques and use of high production inputs is one of the significant parts of rural development programmes. It is advisable that an information centre should be set up in each nyaya panchayat where publicity material like pamphlets, posters, radios, projectors and video-cassettes should be sent by the block officers. The extension officers should make these information centres as the seminar points for the participating rural family in group discussions and making personal contacts which are the effective measures for disseminating information among the uneducated villages³.

The field staff engaged in technical and extension services should be provided upto date knowledge of latest innovation through refresher courses. These courses should be arranged for V.L.W.(V.D.O.), block extension officers and panchayat officers. Such courses should be institutionalised so that ^{the} farmers may get proper training. The farmers at the beginning of rabi and kharif season should be trained in crops, husbandry, live stock keeping, maintenance of farm equipment and machinery etc. For their proper training a government farm in each nyaya panchayat is also necessary.

The use of various farm implements such as tractors, pumping sets, harrows, harvesters etc. are being popularly used by the farmers. But they feel a great difficulty in proper maintenance of these implements. It is, therefore, necessary that the agro service centres should be opened in each nyaya panchayat. These agro centres can provide tractors, pumpsets, threshers etc. by hire purchase system. These centres can also provide repairing facilities and facilities for digging wells and boring tube wells. They can also make a sale of diesel, cattle and poultry feed and can extend technical services for land development, soil conservation etc.

In the study area the position of seed supply, seed eradication provision of chemical fertilizers and implements has been discussed in the following paragraphs.

In the development blocks Baberu, Kamasin and Bisanda the extension workers have done a commendable work by the demonstration work regarding the use of improved ploughs cultivators, pressing machines, spray machines, tractors etc. Due to their demonstration activities the farmers of the tahsil have adopted these implements in a considerable number. The following table shows the block wise statement of wooden ploughs, steel ploughs, harrows and cultivators, thresher machines, sprayers, developed seeding implements and tractors etc.

Table 6
Statement of Agricultural Equipments in Tahsil Baberu, 1994-95.

Sl. no.	Blocks	Wooden ploughs	Steel ploughs	Harrows & cultivators	Threshing machine	Sprayers	Developed seeding implements	Tractors
1	2	3	4	5	6	7	8	9
1.	Baberu	9323	3149	274	11	15	1594	34

1	2	3	4	5	6	7	8	9
2. Kamasin		9682	6925	295	12	16	11776	40
3. Bisanda		11296	523	342	15	19	6775	65
Total Tahsil Baberu		30291	10497	901	38	49	20135	139

Source : District Statistical Magazine, Banda, 1984-85 pp.83-84.

From the above table it^{is} evident that the wooden ploughs are still in practice among the maximum number of farmers. The tractors are owned by a very little number of big farmers. Threshers and spray machines are also not in a satisfactory number.

The tahsil is still nil in agro service centres. It is also lacking in cold storage facilities. However, there are seed-cum-fertilizer depots, pestiferous, rural godowns and gohar gas plants. These facilities are quite insufficient for the agriculturally rich tahsil. The following table gives an idea of facilities for agricultural development of tahsil Baberu.

Table 7
Statement of Agricultural Facilities in Tahsil Baberu, 1984-85
(in Metric tonnes)

Sl No	Blocks	Seed-cum-fertilizer depots		Pesticides depots		Cold Storage		Rural Godowns		Agricultural service centres.		Gohar gas plants
		No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	Agro	Others	
1	2	3	4	5	6	7	8	9	10	11	12	13
1. Baberu		5	250	-	-	-	-	2	200	-	3	29
2. Kamasin		1	50	1	80	-	-	7	700	-	-	10
3. Bisanda		1	50	-	-	-	-	2	200	-	1	46
Total		7	350	1	80	-	-	11	1100	-	4	85

Source : District Statistical Magazine, Banda, 1984-85.

Besides above mentioned facilities, a programme of crop protection was under taken during Kharif season in 1985. The programmes under taken during the season have been given in the following table :

Table 8
Crop Protection Programmes during Kharif Season in
Tahsil Baberu, 1985-86.

Sl. No.	Blocks	Seed purification (in Hec.)	No. of mouses controlled	Pestiferous control (in Hec.)	Intensive crop protection programme	Weeds control (in Hec.)	No. of farmers training programme	Food grain storage
1	2	3	4	5	6	7	8	9
1.	Baberu	4660	7000	1600	3500	850	500	3670
2.	Kamasin	4410	7000	1600	3500	850	500	3270
3.	Bisanda	4660	7000	1700	3500	900	500	3670
Total		13730	21000	4900	10500	2600	1500	10610

Source : Agricultural Planning, Distt. Banda.

The use of chemical fertilizers is increasing day by day various agencies supply Nitrogen, Phosphate and Potash to the needy farmers. In the following table the statement of fertilizer distribution in 1985 has been given.

Table 9
Blockwise Distribution of Chemical Fertilizers in 1985

Sl. No.	Blocks	Nitrogen					Phosphate					Potash				
		Ag.	Co-Op.	Agro	Other	Total	Ag.	Co-Op.	Agro	Other	Total	Ag.	Co-Op.	Agro	Other	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.	Baberu	90	130	-	280	500	50	140	-	20	210	5	15	-	20	40
2.	Kamasin	60	90	-	100	250	50	80	-	-	130	5	5	-	10	20
3.	Bisanda	90	130	-	405	625	40	145	-	80	265	5	10	-	25	40
Total		240	350	-	785	1375	140	365	-	100	605	15	30	-	55	100

Source : Agricultural Planning, Distt. Banda.

The development blocks distribute various agricultural implements to achieve better crop yield though they are not within the reach of a common farmer. Therefore only a few of them are benefited by these programmes. The following table exhibits the distribution of agricultural implements in the different blocks of the tahsil.

Table 10
Distribution of Agricultural Implements and Grain Containers
in Tahsil Baberu, 1985.

Sl. No.	Blocks	No. of grain	No. of ploughs	No. of cultivators	No. of Singh Patela	No. of seed drills	No. of Chongas	No. of Hand hoes	No. of all paid threshers	No. of threshers	Others	No. of Bio-gas plants
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	Baberu	50	110	50	10	1	50	50	10	40	100	40
2.	Kanasin	50	100	50	10	1	40	50	5	30	100	40
3.	Bisanda	50	100	50	10	1	40	50	10	40	100	40

Source : Agricultural Planning, Distt. Banda.

There are good programmes for agricultural development being extended through development blocks. But major benefit of these programme go to the big farmers. The need of the hour is to provide these technical and extension services to the common farmer. To make this goal a reality, the distribution system must be diversified and the decentralized. Each nyaya panchayat must have all facilities required for the crops of the study area. The V.L. Ws. and Soil Scientists should reach field to field and make an examination of crop requirements and soil deficiencies so that proper manuring and chemicalization may be provided properly and timely. Our nation will rise only when its farmers rise.

4.3 MEDICAL AND HEALTH FACILITIES :

Health is a state of complete physical, mental, psychological and social well being and not merely the absence of disease or abnormality (W.H.O.). It represents a balanced relationship of the body and mind and complete adjustment to the total environment⁴. The climate of the district is generally condemned place to place, except in certain localities. It is exhausting after a series of years rather than productive of a certain type of disease.

According to L.D. Stamp, "The good health whether applied to man or indeed, to any living animal and plant implies that the complex organism is functioning correctly and in harmony with its environment⁵. That is why today health planning has become a major component of National development planning. Health planning is necessary for the economic and rational utilization of material, man power and resources. The main purpose of this planning is to improve the health services and control the rapid growth of population.

"The size of country's population is obviously important in that the larger the number of people the more they are at risk of exposure to disease. If the population is too large in relation to its natural resources and the availability of capital etc., the living standards will be very low. It will also give rise to problems that will affect the health and welfare of the rest of the world⁶. In the words of G. Melvyn Howe "In the main land China, India, Bangladesh, Indonesia and parts of the mediterranean and the West Indies, the evils of over crowding slums, mass unemployment, poverty and disease are all too evident"⁷.

Addressing the ninth pacific science congress at Bankok on the subject of methodology in medical Ecology, Dr. Jacques May

summarized the position by saying that we want to know "who has what and where, later will come the demanding question why"?

The history of the medical and health facilities in the study area is not very old. It can be traced back only since 1893 when a dispensary was set up at Baberu. It was in the charge of one hospital assistant only. The regular medical and health services could be started in the study area only after freedom and were maintained from local funds³.

During the VIth Five Year Plan the extension of medical facilities was done in the tahsil with a view to provide better medical aid to the needy population. There are 22 hospitals working as primary health centres, Ayurvedic and unani hospitals and Allopathic and Homeopathic dispensaries in the study area. Out of these 3 are the Government Ayurvedic hospitals located at Murwal, Singhpur and Oran. One is Unani hospital located at Augasi and there are 9 Government Homeopathic dispensaries located at Marka, Melathu, Chausad, Para, Tendura, Sunahuli, Chakrehi, Ingua Mau and Chhilolar and 4 are state allopathic dispensaries located at Simuni, Kurrahi, Bisandi and Bira and 1 is Zila Parishad Allopathic dispensary located at Bhabhua. There are 3 primary health centres located at Baberu, Kamasin and Bisanda and 1 is Female hospital located at Baberu. Besides these health centres, at the lowest level are the specialised units known as the maternity and child health centres (MCH_6), Family Planning Centres (44) (FPC_6) and sub family planning centres (FPC_5) sub maternity and child welfare centres established in the study area. The Government Female hospital Baberu serves the whole study area. Most of these health centres family planning, maternity and child welfare centres and sub centres are of recent origin. The distribution of these hospitals and centres has been given in table 11. The doctors and beds show positive co-relation ($P = 0.92$) Fig. 4.2 B.

Table 11
The details of hospital health centres and dispensaries and
their number of doctors, beds and nurses
in tahsil Baberu, 1985-86.

Sl. No.	Location	Ayurvedic Unani Hospitals	Primary Health centres/ female hospitals	Dispensaries (S.A.D./Zila Parishad)			No. of doctors	No. of beds	No. of nurses
				Ayurvedic	Allopathic	Homeopathic			
1	2	3	4	5	6	7	8	9	10
1. Baberu	-	2	-	-	-	-	3	10	2
2. Bhabhua	-	-	-	-	1	-	1	6	-
3. Augasi	1	-	-	-	-	-	1	4	-
4. Murwal	1	-	-	-	-	-	1	4	-
5. Marka	-	-	-	-	-	1	1	-	-
6. Simauni	-	-	-	-	1	-	1	-	-
7. Milathu	-	-	-	-	-	1	1	-	-
Total Baberu Block	2	2	-	-	2	2	9	26	2
8. Bisanda	-	1	-	-	-	-	2	6	-
9. Singhpur	1	-	-	-	-	-	1	4	-
10. Oran	1	-	-	-	-	-	1	4	-
11. Chausad	-	-	-	-	-	1	1	-	-
12. Para	-	-	-	-	-	1	1	-	-
13. Tendura	-	-	-	-	-	1	1	-	-
14. Kurrahi	-	-	-	-	1	-	1	2	-
15. Bisanda	-	-	-	-	1	-	1	2	-
Total Block Bisanda	2	1	-	-	2	3	9	18	-
16. Kamasin	-	1	-	-	-	-	2	4	-
17. Sunahuli	-	-	-	-	-	1	1	-	-

1	2	3	4	5	6	7	8	9	10
18.Chakrehi	-	-	-	-	-	1	1	-	-
19.Ingua Mau	-	-	-	-	-	1	1	-	-
20.Chhilolar	-	-	-	-	-	1	1	-	-
21.Bira	-	-	-	-	1	-	1	2	-
Total Block Kamasin	-	-	1	-	-	1	4	7	6
Total Tahsil Baberu	4	4	-	-	5	9	25	50	2

Source : Chief Medical Officer, & Chhetriya Ayurvedic Awam Unani Adhikari, Office- Banda.

(1) The diseases prevalent in the study area :

The diseases which are prevalent in tahsil Baberu can be categorised into malaria, dysentery, enteric fever, influenza, T.B., whooping cough, guinea worm gastro ententias, infection hepatices and other disease. The main cause behind the occurence of these disease is the malnutrition an unpurified water which is used by the rural masses of the study area. The living conditions in the rural areas are very inhygienic which are responsible for. these health hazards. The diseases as influenza, malaria, guinea worm also found some times in the study area. According to the records of out door and indoor patients in the hospitals and dispensaries of the tahsil Baberu, the condition and distribution of diseases is given in table 12.

Table 12
Details of patients Various Diseases in the Hospitals and Dispensaries
in Tahsil Baberu 1985-86.

Sl. No.	Hospitals and Dispensaries	Dysentery all forms	Enteric fever	Gastro-enteritis	Guinea worm	Infection Hepatitis	Influenza	Plaint cove	Paralytic polio	Ro-bise	Syphilise
1	2	3	4	5	6	7	8	9	10	11	12
1.	Primary Health Centre, Baberu	939	51	-	12	-	15	-	-	7	-
2.	Female Hospital Baberu	57	3	-	-	-	-	-	-	-	-
3.	G.Unani Hospital, Augasi	15	8	-	1	-	3	-	-	-	1
4.	G.Ayurvedic Hospital, Murwal	914	2	-	-	3	21	-	1	-	4
5.	G.Homeopathic dispensary, Marka	168	19	2	-	1	10	-	-	1	-
6.	G.A.Dispensary Sinauni	110	20	-	4	-	-	1	-	2	-
7.	G.Homeopathic Dispensary, Melathu	71	13	-	-	-	6	-	-	-	-
8.	Zila Parishad Allopathic Bhabhua	-	-	-	-	-	-	-	-	-	-
Total block Baberu		2174	116	2	16	4	55	1	1	10	5
9.	Primary Health Centre, Bisanda	246	1	-	3	2	-	-	-	-	-
10.	G.Ayurvedic Hospital Singhpur	218	1	-	2	1	12	-	-	-	-
11.	G.Ayurvedic Hospital, Oran	321	6	-	8	1	13	-	2	-	2
12.	G.Homeopathic Dispensary, Chausad	213	2	-	-	-	8	-	3	-	-
13.	G.Homeopathic Dispensary, Para	109	5	1	4	-	12	-	-	-	-
14.	G.Homeopathic Dispensary, Tendura	212	2	-	-	2	11	-	-	3	-

Sl. No.	Hospital and Dispensaries	Gonogocal Infection	Nepo-nat-rum	T.B.	Whooping cough	Phe-asl-es	Hoe-marr-iafic	Ence-phi-lite	Deph-ther-ia	All oth-er	Grand total
1	2	13	14	15	16	17	18	19	20	21	22
1.	Primary Health Centre, Baberu	-	6	69	184	-	-	-	-	3582	9865
2.	Female Hospital, Baberu	-	-	19	1	-	-	-	-	589	669
3.	G.Unani Hospital, Augasi	-	-	2	5	-	-	-	-	223	258
4.	G.Ayurvedic Hospital, Murwal	-	2	14	68	-	-	-	-	7982	8811
5.	G.Homeopathic Dispensary, Marks	-	-	11	27	-	-	-	-	3189	3429
6.	G.A.Dispensary, Simauni	-	-	5	19	2	-	4	-	1511	1678
7.	G.Homeopathic Dispensary, Melathu	-	-	2	10	-	-	-	-	1321	1423
8.	Zila Parishad Allopathic, Bhabhua	-	-	-	-	-	-	-	-	-	-
Total block Baberu		-	8	122	314	2	-	4	-	23297	26131
9.	Primary Health Centre, Bisanda	-	-	14	38	-	-	-	-	2623	2927
10.	G.Ayurvedic Hospital, Singhpur	-	-	10	40	-	-	-	-	6476	6760
11.	G.Ayurvedic Hospital, Oran	1	4	19	47	1	-	1	-	8241	8667
12.	G.Homeopathic Dispensary, Chausad	2	-	6	18	-	-	-	-	4216	4468
13.	G.Homeopathic Dispensary, Para.	-	-	18	23	-	-	-	-	1828	2002
14.	G.Homeopathic Dispensary, Tendura	-	-	12	41	-	-	-	-	2113	2396

1	2	3	4	5	6	7	8	9	10	11	12
15.G.Allopathic Dispensary, Kurrahi	78	5	2	-	-	28	-	-	2	-	
16.G.Allopathic Dispensary, Bisandi	102	11	-	2	-	-	3	-	4	-	
Total Block Bisanda	1499	33	3	19	6	84	5	5	9	2	
17.Primary Health Centre, Kamasin	329	26	-	8	-	14	-	-	-	-	
18.G.Homeopathic Dispensary, Sunahuli	122	11	-	6	-	12	-	3	-	2	
19.G.Homeopathic Dispensary, Chakrehi	126	20	-	2	3	9	-	-	-	-	
20.G.Homeopathic Dispensary, Ingua, Mau	248	3	2	-	-	10	-	-	-	-	
21.G.Homeopathic Dispensary, Chhilolar	118	5	-	2	-	15	-	-	2	-	
22.G.Allopathic Dispensary, Bira	129	6	-	-	-	19	-	2	-	-	
Total Block Kamasin	1072	71	2	18	3	79	-	5	2	2	
Total Tahsil Baberu	4745	220	7	53	13	218	6	11	21	9	

1	2	13	14	15	16	17	18	19	20	21	22
15. G.Allopathic Dispensary, Kurrahi	-	-	21	61	4	-	-	-	-	1971	2172
16. G.Allopathic Dispensary, Bisandi	2	-	18	29	-	-	-	-	-	2012	2183
Total Block Bisanda	5	4	118	297	5	-	1	-	-	29480	31575
17. Primary Health Centre, Kamasin	-	-	20	36	-	2	-	-	-	5610	6045
18. G.Homeopathic Dispensary, Sunahuli	5	-	8	22	-	-	-	-	-	1522	1713
19. G.Homeopathic Dispensary, Chakrehi	-	-	6	12	-	-	-	-	-	1317	1495
20. G.Homeopathic Dispensary, Ingua, Mau	-	-	8	14	-	-	-	-	-	3512	3797
21. G.Homeopathic Dispensary, Chhilolar	-	-	4	19	-	-	-	-	-	1561	1726
22. G.Allopathic Dispensary, Bira.	-	-	6	21	-	-	-	-	-	2016	2199
Total Block Kamasin	5	-	52	124	-	2	-	-	-	15538	16975
Total Tahsil Baberu	10	12	292	735	7	2	5	-	-	69315	74681

Source : Chief Medical Officer, Banda and Chhetriya Ayurvedic Awan Unani Adhikari, Banda.

The table 12 represents the prevalence of death causing diseases in the study area. To eliminate the fatality of the above mentioned diseases, we will have to implement the recommendations of the minimum needs programme in the area such as :

- (i) to provide facilities for elementary health education to all.
- (ii) to extend minimum uniform health facilities to all.
- (iii) to provide clean drinking water in sufficient quality.
- (iv) to improve the gramin environment through sanitation and improving living conditions of the farmers.
- (v) to provide houses to the land less labourers, and
- (vi) to construct all weather and link roads in the rural areas.

For the better living in gramin areas the medical and health facilities which are quite insufficient must be extended to make them within the reach of a common man. To fulfil this purpose the following steps must be taken :

- (i) to establish one T.B. hospital in the tahsil Baberu.
- (ii) to establish one big hospital in the study area.
- (iii) to establish one permanent family planning centre equipped with all facilities in the tahsil.
- (iv) to establish one ladies hospital in each nyaya panchayat in the study area.
- (v) one health inspector/doctor must be appointed atleast in each Gram Sabha.
- (vi) more family planning-cum-health centres and the government Ayurvedic Hospital/dispensaries should be established in each centre or village having the population of 1000 persons.
- (vii) the means and education of family planning must be brought to the knowledge of each individual especially in gramin areas.

- (viii) the number of family planning sub-centres must be increased.
- (ix) the number of maternity and child welfare centres and sub-centres must be increased in the study area for the suitable facilities.

Fig. 4.2 A shows the existing and proposed centres of hospitals, primary health centres, Ayurvedic hospitals, Unani hospitals, Allopathic hospitals, Maternity and Child Welfare Centres, Sub-centres Family Planning Centres, Ayurvedic, Unani, Allopathic Dispensaries in the study area. Atleast one primary health centre, family planning centre, maternity and child welfare centre has been proposed in each nyaya panchayat to facilitate the villages for medical support family planning, maternity and child welfare purposes. To avoid environmental degradation the farmers and agricultural labourer must be educated for better housing and living conditions.

4.4 COMMUNICATION : POSTAL AND TELEGRAPHIC SERVICES :

The nature of communication represents the ease of contact in any area. The postal and telegraphic services are very important means of contact and communication in an area. As means, they generate faster communication channels and thus are dynamic sources for the acceleration of development in any region.

This department was thrown open for private correspondence in 1945. The letters for villages or places in the district were handed over to the nazir or dak muharrir of the collector's court for despatch to the tahsil and thanas. Letters were delivered either by Chaukidars, constables or revenue peons.

This arrangement was inconvenient and gave rise to abuses of all sorts. In 1994 the arrangements for the district dak were taken over by the postal department, which established regular offices where

BABERU TAHSIL EXISTING & PROPOSED HEALTH CENTRES

PROPOSED

EXISTING

- EXISTING:
 - P.H.
 - ALLOPATHIC DISPENSARY
 - FEMALE HOSPITAL T.B. CLINIC
 - AYURVEDIC HOSPITAL
 - HOMEOPATHIC DISPENSARY
 - UNANI HOSPITAL
 - VILLAGE
- PROPOSED:
 - P.H.
 - ALLOPATHIC DISPENSARY
 - FEMALE HOSPITAL T.B. CLINIC
 - AYURVEDIC HOSPITAL
 - HOMEOPATHIC DISPENSARY
 - UNANI HOSPITAL
 - VILLAGE

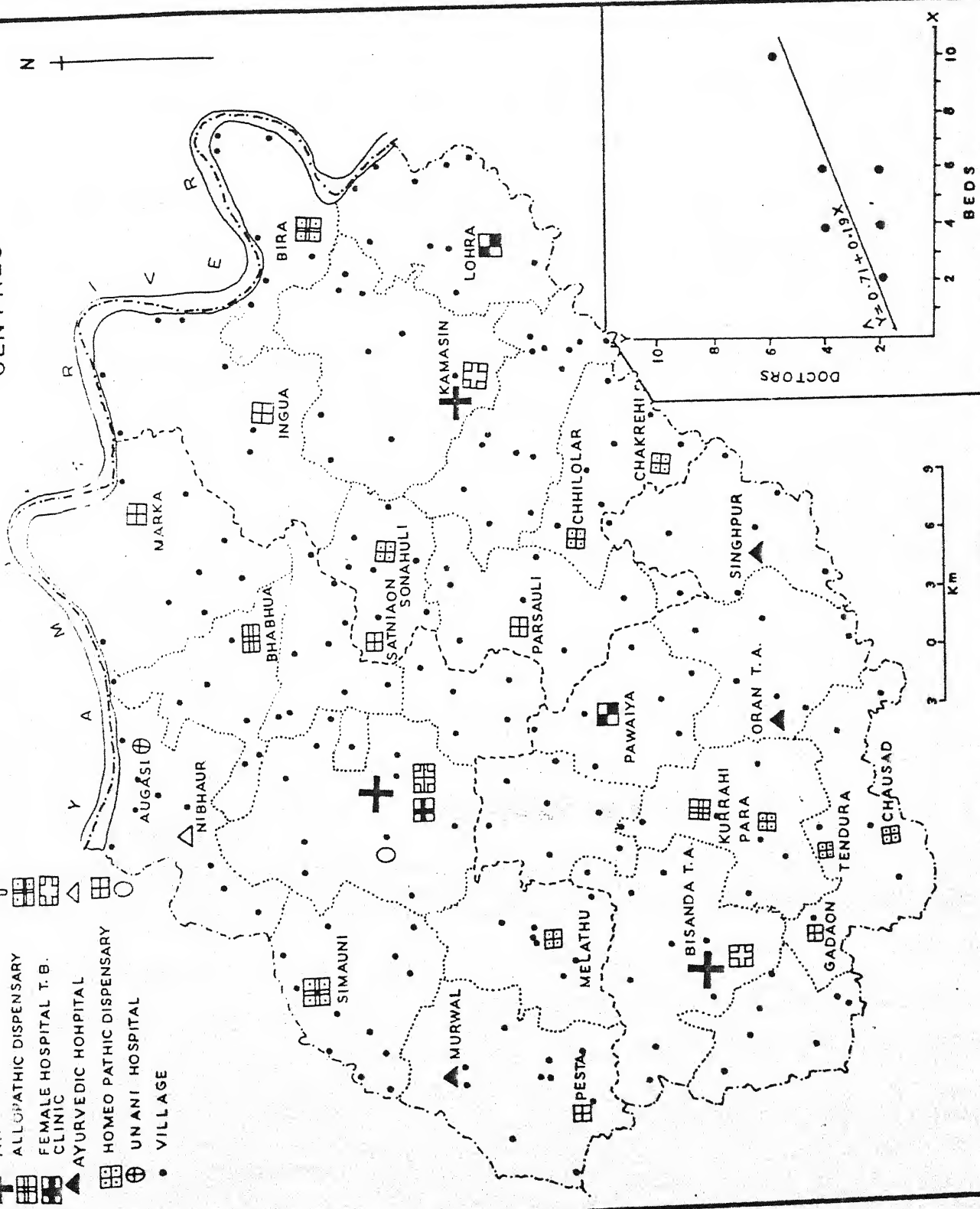


FIG.4.2

BABERU TAHSIL EXISTING & PROPOSED POST-OFFICES

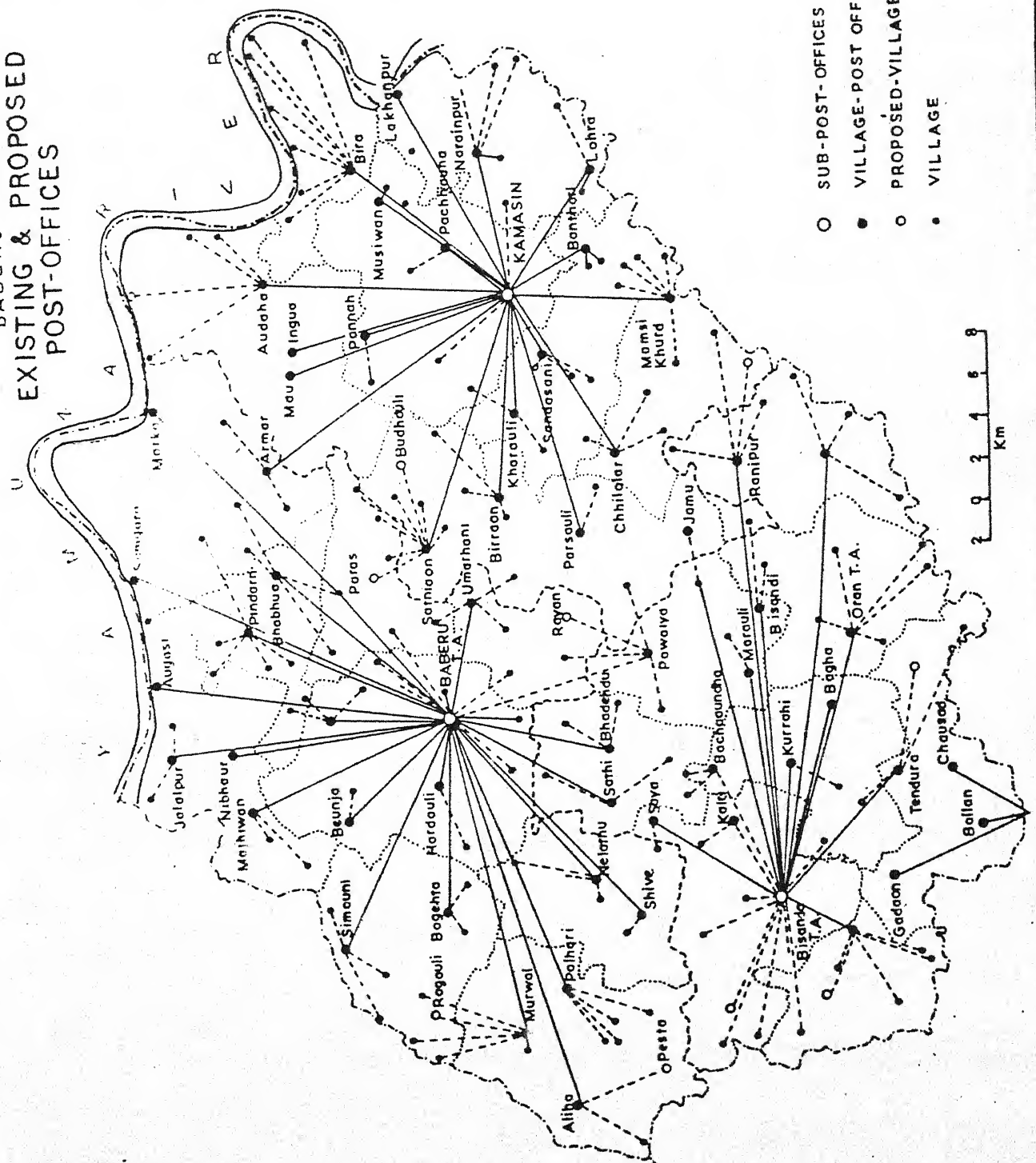


FIG. 4.3

Baberu block is 6063.90 while in Bisanda block it is 6537 and Kamasin block is 500.60. The average Urban Population served by one post office is 7013.33. In tahsil Baberu the minimum average population served by a post office is 3298.50 in Nibhaur nyaya panchayat of Baberu block and the maximum is 11791 in Chandrayal nyaya panchayat of Bisanda block. The following table depicts the nyaya panchayat wise distribution of branch post offices and total as well as average population served by them.

Table 13
Existing Branch Post Offices and Population Served per Post Office in
Tahsil Baberu, 1985.

Sl. no.	Nyaya Panchayat/ Town area	Number of Sub/Branch Office	Population in 1981	Average population served by one post office in each nyaya panchayat.
1	2	3	4	5
1.	Nibhaur	4	13194	3298.50
2.	Bhabhua	2	10699	5349.50
3.	Karhuli Muafi	3	17699	5896.33
4.	Paras	N11	8993	N11
5.	Santer	1	9528	9528.00
6.	Hardauli	3	20503	6434.33
7.	Bagehta	2	13646	6823.00
8.	Palhari	3	15782	5260.66
9.	Badagaon	2	11254	5627.00
Total Block Baberu		20	121278	6063.90
10.	Audaha	3	15976	5325.33
11.	Bira	1	8185	8185.00
12.	Narainpur	3	12228	4076.00
13.	Kamasin	4	16264	4066.00
14.	Sunahuli	1	7831	7831.00

1	2	3	4	5
15. Persauli	3	14745	4915.00	
16. Sanda Sani	3	13620	4540.00	
17. Chhilolar	2	11283	5641.50	
Total Block Kamasin		20	100132	5006.60
18. Bhadehdu	2	12123	6061.50	
19. Bisanda Rural	2	12426	6213.00	
20. Chandrayal	1	11791	11791.00	
21. Chausad	4	17625	4406.25	
22. Kurrahi	3	19157	6335.66	
23. Pawaiya	3	12516	4172.00	
24. Oran Rural	Nil	12199	Nil	
25. Singhpur	2	13293	6646.50	
Total Block Bisanda		17	111129	6537.00
26. Baberu T.A.	1	9695	9695.00	
27. Bisanda T.A.	1	7198	7198.00	
28. Oran T.A.	1	4147	4147.00	
Total Tahsil Baberu		60	353579	5992.98

Source : Superintendent of Post Offices, Banda.

Presently the postal and telegraphic services in tahsil Baberu are not sufficient as many of the villages fall among the average distance of 3 Kms. The villages beyond 3 Kms' distance are unserved villages. To extend postal and telegraphic services to these unserved areas more post offices and branch post offices in the rural

areas should be opened. Hindi telegraph and public call services are totally lacking. Therefore, they also require their establishment at proper locations. Visualizing the growing need of postal and telegraphic services in the study area. The stretching of new locations is necessary. The population in 2001 and distance from existing post offices are the basic parameters for selecting new locations at that point of time. Taken the present growth rate of population as constant the population of villages has been projected for the year 2001. The villages which account for 2000 or more population and have no post or branch post office within 3 Kms. radius have been proposed for new locations. The following table 14 exhibit the locations of post offices, telegraph offices and public call offices in the year 2001.

The annual growth of population (Table 14) has been calculated on the basis of this formula which gives an average arithmetical growth rate (Hemmer and Rogoff, 1966).

$$\text{Formula : } r = \frac{P_2 - P_1 / I_t}{(P_2 - P_1)^2} \times 100$$

Where r is the annual growth rate,

P_1 is population of the region at one time,

P_2 is population of the region at another time,

I_t is the time interval between P_2 and P_1

Table 14
Proposed Post-Offices, Telegraph Offices and Public Call
Offices in Tahsil Baberu for the Year 2001.

Sl. No.	Nyaya Panchayat/ T.A.	Proposed Post-Office				Proposed Telegraph Office			
		Proposed villages	Population in 1981	Projected population (for 2001)	Distance from existing post-office (in Kms.)	Proposed villages/T.A.	Population in 1981	Projected population (for 2001)	Distance from existing telegraph office (in Kms.)
1	2	3	4	5	6	7	8	9	10
1. Nibhaur		Tola Gazi	1571	2579	3	Nibhaur	2082	2961	12
		Badauli	1380	2146	3	Augasi	1748	2547	16
2. Bhabhua		Bakal	1118	2356	3	Bhabhua	2481	2132	12
		Miyan Barauli	1272	2182	3	-	-	-	-
3. Karhuli Muafi		Karhuli Muafi	1152	2021	3	Marka	9340	11630	22
		Sanda	1861	2785	5	Karhuli Muafi	1152	2021	13
4. Paras		Majhila	1251	2194	5	Gujaini	2073	3238	12
		Gujaini	2073	3238	4	Paras	1855	3369	12
		Paras	1855	3369	5	-	-	-	-
		Poon	1481	2028	4	-	-	-	-
5. Santar		Anwan	1238	2010	3	Unrahni	2171	2961	6
		Kuchendu	1650	2677	6	-	-	-	-
		Kayal	1249	2240	5	-	-	-	-
		Reyan	2250	2951	6	Rayan	2250	2951	7
6. Hardauli		Achhah	1220	2015	6	Hardauli	7494	9218	3
7. Baghhta		Tola Kalan	2091	3728	5	Baghhta	2202	3056	10
		Pandri	1341	2165	4	Simauni	3136	4451	10
		Deoratha	1513	2720	3	-	-	-	-
8. Palhari		Pesta	2042	3070	6	Palhari	2831	3791	14

Sl. No.	Nyaya Panchayat/ T.A.	Proposed- Public call office			
		Proposed villages/ T.A.	Population in 1991	Population in 2001.	Distance from existing public call office in Kms.
1	2	11	12	13	14
1. Nibhaur		Nibhaur	2092	2961	12
		Augasi	1749	2547	16
2. Bhabhua		Bhabhua	2491	3132	12
		-	-	-	-
3. Karhuli Muafi		Marka	9340	11630	22
		Karhuli Muafi	1152	2021	13
4. Paras		Gujaini	2073	3238	12
		Paras	1855	3369	12
		-	-	-	-
		-	-	-	-
5. Santar		Umrahni	2171	2961	6
		-	-	-	-
		-	-	-	-
		Rayan	2250	2951	7
6. Hardauli		Hardauli	7497	9218	3
7. Bagehta		Bagehta	2202	3056	10
		Simauni	3136	4451	10
		Tola Kalan	2091	3729	9
8. Palhari		Palhari	2931	3791	14

1	2	3	4	5	6	7	8	9	10
	Para Behari	1447	2044	5	-	-	-	-	-
9. Badagaon	Ahar	1754	2396	6	-	-	-	-	-
	Badagaon	2106	3580	4	Badagaon	2106	3580	6	6
	Melathu	1954	2707	1	Melathu	1954	2707	12	12
Total villages (Block Baberu)		23	36569	59191	98	15	43978	61613	167

10. Aulaha	Arwari	1338	2124	9	Ingua	4061	5561	15	15
	Charka	1782	3286	10	-	-	-	-	-
	Mudwara	1093	2023	6	-	-	-	-	-
11. Bira	Amedhi	1206	2010	10	Bira	3129	4221	14	14
12. Narainpur	Lakhanpur	1275	2462	6	Narainpur	1662	2751	10	10
	Amlokhari	1328	1966	5	Lohra-	2507	3263	7	7
13. Kamasin	Kumehra Sani	2363	3954	7	Kamasin	4595	6411	21	21
14. Sunahuli	Budhauri	1007	1809	5	Satniaon	2191	2950	12	12
	Andauri	1378	2161	4	-	-	-	-	-
15. Parsauli	Binwat	1455	2119	3	Birraon	2402	3365	14	14
	Kurra Buzurg	1768	2922	4	-	-	-	-	-
	Tarayan	2175	2989	5	-	-	-	-	-
16. Sanda Sani	Tilause	3103	4759	5	Sanda Sani	2689	3420	5	5
	Dhundhui	1385	2386	4	Banthari	1518	2381	15	15
	Andaura	1278	2177	5	-	-	-	-	-
17. Chhilolar	Chakrehi	2471	4490	9	Chhilolar	2655	3413	16	16
	Bhiti	1507	3168	8	-	-	-	-	-

Total villages (Block Kamasin)		17	27912	47405	105	10	27409	37736	129
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1	2	11	12	13	14
		Pesta	2042	3070	12
9. Badagaon		Ahar	1754	2386	5
		Badagaon	2106	3580	6
		Melathu	1954	2707	12
Total villages (Block Baberu)		18	49365	70797	193
10. Audaha		Ingua	4061	5561	15
		Audaha	1358	2119	16
		Mau	5469	7313	16
11. Bira		Bira	3129	4221	14
12. Narainpur		Narainpur	1662	2751	10
		Lohra	2507	3263	7
13. Kamasin		Musiwan	2864	6411	12
14. Sunahuli		Satniaon	2191	2950	12
		Ardauli	1378	2161	14
15. Parsauli		Birraon	2402	3365	14
		Parsauli	3523	4138	16
		-	-	-	-
16. Sanda Sani		Sanda Sani	2689	3420	5
		Banthari	1518	2381	15
		Kharauli	1345	1917	6
17. Chhilolar		Chhilolar	2655	3413	16
		Mamsikhurd	2389	3019	12
Total villages (Block Kamasin)		16	41140	58408	200

1	2	3	4	5	6	7	8	9	10
18. Bhadehdu	Korram	2312	3101	7	Bhadehdu	3263	4329	9	
	Phuphundi	1656	2360	6	Sathi	1633	2218	12	
	Akauna	1918	4270	5	-	-	-	-	
19. Bisanda Rural	Pawai	1919	2835	8	Kairi	3596	4417	12	
	Lauli Tika Mau	3596	5051	7	-	-	-	-	
20. Chandrayal	Siklodhi	1719	2318	6	Punahur	4451	6214	6	
	Pindkhar	1830	2396	7	-	-	-	-	
	Kusma	1456	2208	8	-	-	-	-	
21. Chausad	Nandan Mau	2062	3900	7	Chausad	3520	4398	12	
22. Kurrahi	Para	2510	5097	5	Kurrahi	6465	8115	6	
	Anwan	2639	5645	4	-	-	-	-	
	Dabhani	3132	6316	5	-	-	-	-	
23. Pawaiya	Jarohra	1907	3487	5	Pawaiya	2620	3029	6	
	Amlohra	2090	3116	7	-	-	-	-	
24. Oran Rural	Majhiwan Sani	2919	5096	8	Majhiwan Sani	2919	5096	6	
	Sahpur Sani	2038	2509	7	-	-	-	-	
	Kullu Kheda	1709	3103	9	-	-	-	-	
	Bhadawal	1430	2385	9	-	-	-	-	
25. Singhpur	Utarwan	2758	4971	7	-	-	-	-	
<hr/>									
Total Villages (Block Bisanda)	19	41680	70454	127	8	28467	37816	69	
<hr/>									
26. Baberu T.A.	-	-	-	-	-	-	-	-	
27. Bisanda T.A.	-	-	-	-	Bisanda T.A.	7198	12388	13	
28. Kamasin T.A.	-	-	-	-	Oran T.A.	4147	7621	20	
<hr/>									
Total Villages (Tahsil Baberu)	59	106161	177050	330	35	111099	157174	398	

1	2	11	12	13	14
18. Bhadehdu	Bhadehdu	3263	4329	9	
	Sathi	1633	2213	12	
19. Bisanda Rural	Kairi	3596	4417	12	
	-	-	-	-	
20. Chandrayal	Punahur	4451	6214	6	
	Ballan	4367	-	3	
	-	-	-	-	
21. Chausad	Chausad	3520	4393	12	
22. Kurrahi	Kurrahi	6465	9115	6	
	-	-	-	-	
	-	-	-	-	
23. Pawaiya	Pawaiya	2620	3029	6	
	Marauli	2362	3128	5	
24. Oran Rural	Majhiwan Sani	2919	5096	6	
	Sahpur Sani	2038	2309	5	
	-	-	-	-	
	-	-	-	-	
25. Singhpur	-	-	-	-	
Total villages (Block Bisanda)		11	37234	43753	97
26. Baberu T.A.	-	-	-	-	
27. Bisanda T.A.	-	-	-	-	
28. Kamasin T.A.	-	-	-	-	
Total villages (Tahsil Baberu)		45	127739	172958	490

4.5 BANKING SERVICE :

Banking is one of the most important infrastructures for the agricultural development in the rural areas. so, visualizing this need the programme of lead bank was under taken in each district. In Banda district which includes the study area, the Allahabad Bank was the lead bank which covered each block by installing atleast one branch in each development blocks. But these banks have been very shy in investing into agricultural sector. How ever during last five years the rural banks known as Tulsi Gramin Bank⁹ have been established in remote rural areas under the sponsorship of the lead bank i.e. the Allahabad Bank. These banks are extending credit to the needy and poor farmers.

At present there are four branches of Allahabad Bank located at Baberu, Bisanda, Kamasin and Oran town areas. Besides these banks the co-operative banks are also functioning in the study area. Parallel to the Allahabad Bank its branches are located at block head quarters. One branch of Land Development Bank is working at Baberu town. The Tulsi Gramin Bank sponsored by the Allahabad Bank has revitalized the banking services in the whole tahsil. It has promoted its service even to the ^{far}flung rural areas. As much as 16 branches of Tulsi Gramin Bank are working at different parts of the tahsil. Fig. 4.4A depicts their location in the study area.

All the above mentioned banks are financing individual cultivators for the purchase of productive inputs like agricultural machinery including tractors, pumpsets, rickshaw, Tanga, bullockcarts etc. The bank also provides facilities for maintaining agricultural facilities. The land development bank provides loans for the farm management. However, the recovery of the credit is not satisfactory. Its main reason is the defective administrative and operational arrangements. It becomes highly difficult to deal with the vast number of individuals for the recovery

of credit. They should develop their more effective channels for loan realisation. These commercial banks are extending credit as per direction of the I.R.D. programme of the government of India (See Fig.4.4 B). The blockwise distribution of credit during 1983-85 has been given in the table 15 (See Appendix IV 1-4).

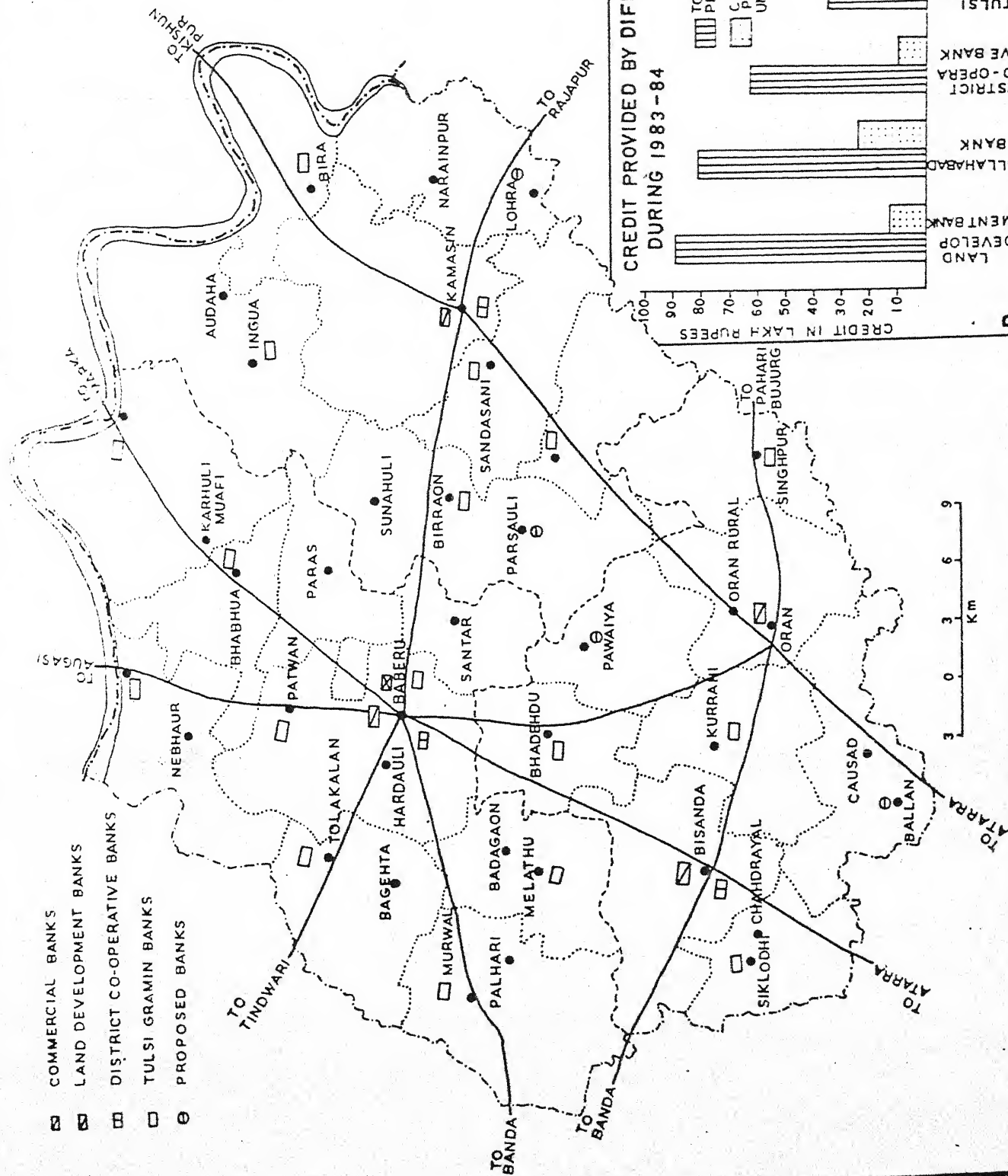
Table 15

Blockwise Distribution of Credit by Different Banks in Tahsil Baberu during, 1983-85.

Sl. No.	Name of bank/ Block	Total credit provided	Credit under I.R.D. programme
1	2	3	4
1.	Allahabad Bank	26.83	5.53
2.	Tulsi Gramin Bank	17.34	11.48
3.	Land Development Bank	30.44	4.69
4.	District Co-operative Bank	28.14	3.19
Total Block Baberu		102.75	24.89
1.	Allahabad Bank	12.16	7.62
2.	Tulsi Gramin Bank	11.33	8.22
3.	Land Development Bank	28.98	4.32
4.	District Co-operative Bank	17.25	2.91
Total Block Kamasin		79.62	23.07
1.	Allahabad Bank	33.55	11.32
2.	Tulsi Gramin Bank	6.59	5.33
3.	Land Development Bank	30.23	4.03
4.	District Co-operative Bank	28.04	4.32
Total Block Bisanda		98.41	25.00
Total Tahsil Baberu		279.78	72.96

Source : Credit Plan of Banda District Uttar Pradesh, 1983-85.

BABERUTAHSIL EXISTING AND PROPOSED BANKS



CREDIT PROVIDED BY DIFFERENT BANKS DURING 1983-84

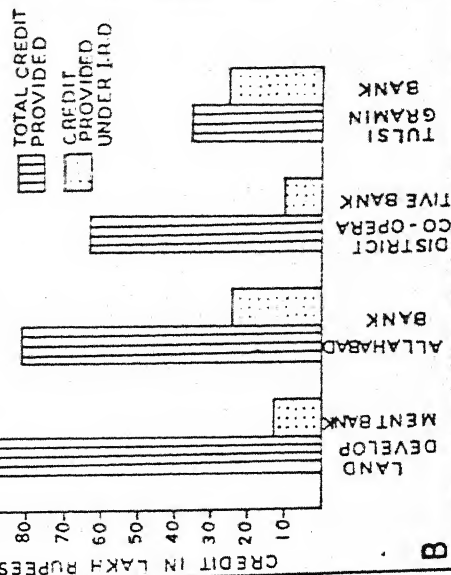


FIG.4.4

The study area still wants better banking facilities as there are a few such nyaya panchayats also where no commercial or rural bank has been established yet to provide facilities to the study area. It is required that atleast one Gramin Bank in each nyaya panchayat should be established. The nyaya panchayats lacking in banking facilities are Paras, Sunahuli, Pawaiya, Narainpur, Chaused and Santar. These nyaya panchayats should be provided banking facilities soon.

Fig. 4.4 A depicts the locations of proposed commercial and rural banks with the establishment of banks in these locations banking facilities will be within the reach of a common farmer and it will help in the diversification of agricultural activity in the study area.

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IDENTIFICATION OF CENTRAL PLACES**5.1 THE CONCEPT :**

The concept of central places is important not only for the settlement studies but also for the economic planning of an area. Mark Jefferson, first of all in 1931 used the term 'Central Place' in his book 'the distribution of the world cities form'. After that Christaller (1933) prepared the real ground for the study of central places. Among the three-vonthumen's, Weber and Christaller's the last one is the most widely accepted theory because Christaller with the help of his theory explained the system of tertiary activities- Losch, further, made it more elastic by applying it to the system of secondary services. The theory of Walter Christaller was based on the principle of Centralistic order of human community behaviour giving rise to organisational structures similar to Crystallisation of mass around a nucleus. This principle finds expression in central places providing central commodities and services to the point bound dispersed settlements located within their complementary region. These region may be of various order in accordance with their importance and centrality. The operational theory of Christaller is explained under the constraints of an isotropic surface such as :

- (1) Homogenous unbound plain in which characteristics of relief and soil fertility are equal.
- (2) Uniform distribution of resources, population, income, demand, propensity of consumption and unrestricted movement of opportunities in every direction so that the unit transport cost may vary according to distance.
- (3) Rational behaviour.

These are the ideal situation. In these situations, the market area of any good or centre will be circular and shall be carved out through the interaction of three factors that is demand, functions of economic scale and the cost of transportation. With the rational behaviour of these three factors any consumer will satisfy his need for goods and services at the nearest centre as the central places are distributed over the space, the whole area of any region should be served by these central places but the problem of over laping and unserved areas can be solved only by the nexagonal market areas of Chrtistaller. Hexagone is the geometrical figure closest to the Circle having no unserved areas.

The range and minimum market area required by goods and services will be different. The goods which require the largest minimum area to become profitable will be offered at centres spaced maximally. These centres will also offer goods of lower order centres or governed by the latter. Thus, the nesting of market areas emerges and its pattern is arranged under different conditions each giving rise to characteristic pattern of hierarchy.

In chrtistaller's marketing principle a higher order central place serves just three lower order centres in hierarchy. One higher order centre is equal to three immediate lower order centres i.e. the market area of a higher order centre is equal to the market areas of three immediate lower order centres. This net work is known as $K = 3$, where K symbolize the higher order centre each lower order centre is located as the midpoint of an equilateral triangle formed by joining the three lower order centres located at the corner points of hexagons of largest

order market area.

In Christaller's principle of transport each lower order centre is located at the midpoint of the transport route joining to higher order centre bisecting the side of the hexagone. Here the $K = 4$ network emerges. In administrative principles the resultant network is $K = 7$.

The central place theory of Christaller has thus the following spatial and functional features :

- (i) The central places are regularly spaced having hexagonal service areas or market areas (complementary regions).
- (ii) Higher order centres are more widely spaced than lower order ones.
- (iii) Higher order centres provide goods and services in higher ranges in comparison to lower order centres.
- (iv) The higher order centres nest the service areas of lower order centres in an hierarchical order.

Losch with slight modifications built up his system of central places starting from the lowest level. He took the goods of lowest order and derived a basic triangular-hexagonal system of centres and service areas (Market areas)from among the nucleated villages distributed in a triangular lattice pattern. The location of immediate higher order goods are then determined on the basis of the number of basic hexagonal service areas required to support the provision of the goods. All service area require from one to three times. The basic hexagone locates in $K = 3$ systems. The requirement from three to four times locate in $K = 4$ net work system and those from four to seven times locate in $K = 7$ net work system. After that he rotated that net of hexagons around the fixed the central points and allowed

for the maximum concentration of activities in centres. Thus rich and poor city centres in his economic land scape, could be produced. Losch as Christaller is not rigid about fixed systems. The basic difference between the two contributions are as follows :

- (1) Christaller builds his system from the highest order centre providing goods of maximum range while Losch builds its from the lowest order centre and their service areas.
- (2) Christaller's model provides uniform spaces of centres of equal order where as in Loschian economic landscape of complex service areas where is alternative concentration and dispersal of centres in different sectors.
- (3) Christaller tells that the same order centres provide similar goods and services, where as Losch postulated the specialization among the same order centres or services. In Christaller's framework the higher order centre offers all goods and services provided by lowest order centres. Where as in Loschian system it is not necessary.
- (4) Christaller's central place system is applied for the tertiary services where as Loschian system is applicable to secondary services which are transportable.
- (5) Christaller's fixed K system provides a rigid hierarchy, where as Loschian system does not.

From the above analysis and comparison at the two theoretical contributions regarding central place theory, the following elements emerge-

- (i) The central places of different order are regularly spaced on the surface. Christaller postulates uniform spacing of

centre places- whereas Losch visualizes closer spacing in city rich sectors and wider spacing in city poor sectors for the same order of central places.

(11) the hexagonal shapes of market areas are quite theoretical as maintained by both the contributions.

(111) The most important element of the central place theory is the hierarchical and vertical, functional, organisation as Davies remarks.

The proposition of a hierarchical arrangement of service centres lies at the heart of central place theory. This is the most fundamental conclusion for it is used subsequently as an axiom to derive the other laws of the general theory¹.

From the above study of the two theoretical contributions regarding central place theory, it^{be} comes clear that central places are the points endowed with various services or functions, which can be utilized for spatial organisation and planning.

Thus, the term 'central place' means the location of some goods, service or functions with a potentiality of serving the population of its complementary region alongwith its own. It also expresses the behaviour of users of those functions or services. The behaviour of the people of its hinter land helps in identifying the local points of a homogeneous landscape. This is the function or service of a focal point that gives importance to it a relation to other non central places of its complementary region. These service centres play their rolls in the movement of people, materials and resources. A central place may have one or more central place. It may also have less important or more important functions. On the basis of the type and the number of

functions of the settlement and population which it serves the importance of a central place can be measured. The statistical measurement of this importance is known as centrality score. The spatial reflection of the importance of a central place can be marked in the size and extent of its hinterlands. The demographic reflection can be marked by the size of population availing the services or functions. Thus, the service centre can be of varied importance according to the services of a central place. The hinter land served by it and the size of population being served are most fixed but they are variable.

In this context the term function means any service, facility or amenity which has an economic or social implication and can be used by the people. Education and marketing are such functions. The main important symptom of a function is central function not any function. The central function is such function which is availed by the people of outer areas of the central place. All such functions which have social application and orientation can be called central functions.

These functions have their different levels. For example, education is a multi level function. It has primary middle higher secondary and college levels. Thus, it becomes clear that there is a hierarchy of functions from less important to more important. The less important functions are called lower level functions while the more important functions called higher order functions.

According to the social and economic wants the functions can be divided into two parts :

- (1) The functions which fulfil social wants are called social facilities; and

(ii) The functions which serve economic wants are called infrastructure or economic services.

From the above discussion, it is obvious that a central place may have more or less important functions while another one may have many or more important functions. Thus, between the few and many or less and more different combinations of number and importance of functions are possible. Thus, an hierarchy of these places can be well identified. One can easily mark a pyramidal order or hierarchy of service centres. At the bottom there will be many smaller or lower order central places each performing few less important or lower order central functions. The central places will be followed by more important centres fewer in number but more in importance of Functions. At the top of pyramid there will be one or few highest level central places performing many and more important central functions. Naturally the smaller central places will have their smaller service areas and will serve smaller size of population as compared to more important central places.

A central place serves an adjacent area around it. These adjacent areas form the hinter land of a central place. This hinter land is a continuous socio-economic land scape. The central place and its dependent settlements are its components.

(i) Methodology :

From the previous discussion it becomes clear that the central place is one which performs a central function². A central function is one which is available in a few settlements. Christaller³, the father of the central place theory, reiterated that the services extended to the nearby surrounding areas are the central functions. According to L.S. Bhat⁴ the central

functions are those which are non-ubiquitous in nature because they occur in certain localities. According to the technological, economic or institutional considerations and create surrounding area as hinter lands. Khan⁵ defined that ' central functions are not of fixed types. Whatever service is not available every where but is used by every one is a central function. Production activity is excluded from considerations. According to Rao⁶ the central functions should not be based only on the non ubiquity or ubiquity of functions but also on the preference of the people both producers as well as consumers.

To identify and select service centres and to demarcate their hinterlands for the provision and distribution of various facilities at different levels to satisfy the needs of the people living within them, a number of cartographic and numerical methods and techniques have been utilized by the scholars. They are distance and size of population, infrastructure facilities and flow of population etc. The close observation of these techniques expresses that the method based on the distance criterion neglects the distribution of population and resource over the space. The techniques based on the size of population criteria neglect the distance and resource factors. The methods adopting the criteria of infrastructure facilities emphasis over the rational nature of their future development. The device based on the movement of population alone manifest the factors of preferences of opportunities available in the past over the space. Therefore, the multi-criteria method can be considered more scientific and more believing than the use of one criteria method. Here, to determine a settlement to work as a service centre, the author has selected six major service groups as basis. They are ;

(i) education (ii) Medical service (iii) Transport and communication (iv) agriculture and industry (v) finance and trade and (vi) administration alongwith the population engaged in tertiary activities. Hence, a settlement qualifying any of the following conditions has been identified as service centre provided it has road connection and atleast 15 persons engaged in tertiary activities.

- (i) All the six service groups with atleast 3 % of its working populating engaged in tertiary activities.
- (ii) Any four of the six services with atleast 6% of its working population engaged in tertiary function.
- (iii) Any two of the five services with atleast 9% of workers engaged in tertiary services.
- (iv) Any one service with atleast 12% of its working population dependent on tertiary activities.
- (v) 15 % of its workers engaged in tertiary activities with or without any of the five services.

Applying above mentioned conditions 53 out of 214 settlements in tahsil Baberu have been selected as service centres. Besides this, a few prospective service centre have also been determined using the following parameters.

- (i) Any of the six services mentioned above.
- (ii) Any two of the service with 3% of its working population engaged in tertiary functions.
- (iii) One service with 6% of workers engaged in tertiary activities.
- (iv) Any two services with road connection and population more

than 1000.

(II) Centrality Score and weighting system :

Various quantitative techniques have been used for measuring and determining the centrality and hierarchy of settlements. A number of scholars have expressed their ideas regarding the centrality of settlements. According to Prakash Rao⁷ the centrality is, in terms of quantity and quality, the central functions performed by settlements. Bhat⁸ reiterated the dynamic nature of functions and their potentiality where considering the centrality of settlements. According to Mosely⁹ the nature of centrality is of two kinds. Firstly, it is related to the nodality expressed in terms of connectivity and secondly, the central functions expressed by the number of services. "Centrality is an expression of the consumer behaviour of the population of an area on the basis of which the central places can be arranged in a hierarchical order"¹⁰. According to Christaller, in a regional framework the centrality of a settlement shows its relative significance¹¹. The centrality is the product of the quality and quantity of central functions performed by the centres¹² which can be served as a strong basis for arranging the service centres in hierarchical order. In the present study the centrality of 53 services centres and their hierarchy have been computed with the help of median threshold technique. First of all, entry points and saturation of each service or function have been determined. Entry points mean the limit of population of service centres from which a service emerges and the saturation point means that population of service centres over which the services are ubiquitously available. The means of entry point and saturation points have been calculated to get

median threshold. The median threshold population for a particular service (here primary school) has been arbitrarily weighted. Taking this median threshold population as the base all other services has been given a relative weight as depicted in the following table :

Table 1
Hierarchy of Functions

Sl. No.	Functions	Entry-point	Saturation point	Median	Weightage	Index no.
1	2	3	4	5	6	7
1.	Primary School	260	1152	1056	1	1
2.	Junior High School	1119	1743	1733	1.64	9
3.	High School	1393	2402	1900	1.79	13
4.	Intermediate college	1950	2431	2215	2.09	14
5.	Bus stop/stand	1152	1193	1175	1.11	3
6.	Post Office/ Branch Office	1393	1633	1515	1.43	7
7.	Commercial Bank	4147	4595	4371	4.13	17
8.	L.D.Bank	9695	9695	9695	9.13	30
9.	Co-operative Bank	4595	7193	5396	5.53	21
10.	Regional Rural Bank	1719	1743	1733	1.64	10
11.	Auto Mobile Repairing	7193	9695	8446	7.99	29
12.	Chemist and Druggist	4147	4595	4371	4.13	13
13.	Primary Health Centre	4595	7193	5396	5.53	22
14.	Police Station	4595	7193	5396	5.53	23
15.	Stock Man	1633	1743	1690	1.60	8
16.	Veterinary Hospital	4125	4595	4360	4.12	16
17.	Maternity and Child Welfare Centre	4595	7193	5396	5.53	24
18.	Family Planning Centre	4595	7193	5396	5.53	25

1	2	3	4	5	6	7
19.V.L.W.Head Quarter		960	1633	1296	1.22	5
20.Artificial Prignancy		1633	4145	2579	2.72	15
21.Agricultural extension Centre		4545	7198	5996	5.58	26
22.Multipurpose Co-operative Societies		1662	2042	1952	1.75	12
23.Food Grain Distribu-tion Centre		4545	7198	5996	5.58	27
24.Block Head Quarter		4545	7198	5996	5.58	28
25.Fertilizer Distribu-tion Centre		1152	1662	1407	1.33	6
26.Telegraph Centre		9695	9695	9695	9.18	31
27.Telephone Centre		4147	4595	4371	4.13	19
28.Aata Chakki		1152	1198	1175	1.11	4
29.Tahsil Head Quarter		9695	9695	9695	9.18	32
30.Town Area		4147	7198	5672	5.37	20
31.Dispensaries		960	1198	1079	1.02	2
32.Co-operative Seed Store		1152	2402	1777	1.68	11

On the basis of the weights so awarded. The services have been grouped in an ascending order, according to the occurrences of the service. Their weights have been multiplied to get the real weights and their significance as central functions. All such cumulative weights of services in a centre have been finally added to get centrality score. The centrality scores thus derived ranges from 3.13 (Gujaini) to 177.56 (Baberu town area) and have been utilized in the hierarchical ordering of service centres of the study area. Greater the Centrality score higher the service

centre and lower the centrality score smaller the service centre
as shown in table (2 and 3).

Table 2
Settlementwise Cumulative Weight and their Centrality Score

Sl. No.	Weight given to each functions	1	1.02	1.11	1.11	1.22	1.33	1.43	1.60	1.64	1.64	1.69
	Settlements name	Primary school	Dispanceries	Bus-Stop / Stand	Aata Chakki	V.L.W. (H.Q.)	Fertilizer distribution centre	P.O. Branch Post Office	Stock man	Junior High School	Reg-ion-al Bank	Co-operative seed store
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	Baberu T.A.	C.F. W	4	10	1	20	2	1		2	1	1
			4.00	10.20	1.11	22.20	2.66	1.43		3.29	1.64	1.69
2.	Bisanda	CF W	2	6	1	12	1	1		2		1
			2.00	6.12	1.11	13.32	1.33	1.43		3.29		1.69
3.	Kamasin	CF W	2	2	1	5	2	1		1		1
			2.00	2.04	1.11	5.55	2.44	1.53	1.43	1.64		1.69
4.	Oran	CF W	2	2	1	4	1	1	1	1		1
			2.00	2.04	1.11	4.44	1.33	1.43	1.60	1.64		1.69
5.	Murwal	CF W	2	2	1	2	1	1		1	1	1
			2.00	2.04	1.11	2.22	1.33	1.43		1.64	1.64	1.69
6.	Marka	CF W	2	2	1	2	1	1		2	1	
			2.00	2.04	1.11	2.22	1.22	1.43		3.29	1.64	
7.	Singhpur	CF W	2	1	1	2	1	1		1	1	1
			2.00	1.02	1.11	2.22	1.33	1.43		1.64	1.64	1.69
8.	Bhabhua	CF W	2	1	1	1	2	1	1	1	1	
			2.00	1.02	1.11	1.11	2.44	1.43	1.60	1.64	1.64	
9.	Bira	CF W	2	1	1	1	2	1	1		1	1
			2.00	1.02	1.11	1.11	2.44	1.33	1.43		1.64	1.69
10.	Sanda Sani	CF W	2	1	1	1	2	1	1	1	1	
			2.00	1.02	1.11	1.11	2.44	1.33	1.43	1.64	1.64	
11.	Bhadehdu	CF W	2	1	1	1	2	1	1	1	1	
			2.00	1.02	1.11	1.11	2.44		1.43	1.64	1.64	
12.	Chausad	CF W	2	1	1	1	2	1	1	1	1	
			2.00	1.02	1.11	1.11	2.44	1.33	1.43	1.64		

[illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13
13. Birraon	CF 2	1	1	1				1	1		1	1
	W 2.00	1.02	1.11	1.11				1.43	1.60		1.64	1.63
14. Chhilolar	CF 2		1	1	2	1	1				1	
	W 2.00		1.11	1.11	2.44	1.33	1.43				1.64	
15. Kurrahi	CF 2	1	1	1	2			1			1	
	W 2.00	1.02	1.11	1.11	2.44			1.43			1.64	
16. Aliha	CF 2	1	1	1	1			1		1		
	W 2.00	1.02	1.11	1.11	2.44			1.43		3.28		
17. Ingua	CF 2	1		1	1			1	1	1	1	
	W 2.00	1.02		1.11	1.22			1.43	1.60	1.64	1.64	
18. Augasi	CF 2	1	1	1				1	1	1	1	
	W 2.00	1.02	1.11	1.11				1.43	1.60	1.64	1.64	
19. Karhuli Muafi	CF 2		1	1	2	1						1
	W 2.00		1.11	1.11	2.44	1.33						1.63
20. Hardauli	CF 3	1	1	1	2			1				
	W 3.00	1.02	1.11	1.11	2.44			1.43				
21. Sathi	CF 1	1	1			1		1	1			
	W 1.00	1.02	1.11			1.22		1.43	1.60			
22. Meethu	CF 2	1	1	1							1	
	W 2.00	1.02	1.11	1.11							1.64	
23. Narainpur	CF 1				1	2	1	1				
	W 1.00				1.11	2.44	1.33	1.43				
24. Patwan	CF 2		1	1				1		1	1	
	W 2.00		1.11	1.11				1.43		1.64	1.64	
25. Pachhauha	CF 2	1	1	1				1		1		
	W 2.00	1.02	1.11	1.11				1.43		1.64		
26. Kairi	CF 2	1	1	1				1		1		
	W 2.00	1.02	1.11	1.11				1.43		1.64		
27. Musiwan	CF 2	1	1	1				1		1		
	W 2.00	1.02	1.11	1.11				1.43		1.64		
28. Palhari	CF 2				1			1		2		
	W 2.00				1.11			1.43		3.28		

1	2	3	4	5	6	7	8	9	10	11	12	13
29. Bagahtha	CF 1 W 1.00				1 1.11	2 2.44		1 1.43				
30. Badagaon	CF 2 W 2.00				1 1.11	2 2.44						
31. Jamu	CF 2 W 2.00			1 1.11	1 1.11			1 1.11		1 1.11		
32. Tola Kalan	CF 2 W 2.00		1 1.02	1 1.11	1 1.11						1 1.64	
33. Baberu Rural	CF 2 W 2.00		1 1.02		2 2.22					1 1.64		
34. Mau	CF 2 W 2.00		1 1.02	1 1.11	1 1.11	1 1.22		1 1.43				
35. Siklodhi	CF 1 W 1.00			1 1.11	1 1.11					1 1.64	1 1.64	
36. Beunja	CF 1 W 1.00		1 1.02		1 1.11			1 1.43				
37. Lauhi Tika Mau	CF 2 W 2.00				1 1.11			1 1.43		1 1.64		
38. Satniaon	CF 2 W 2.00				1 1.11			1 1.43		1 1.64		
39. Majhiwan	CF 2 W 2.00		1 1.02		1 1.11			1 1.43				
40. Pindaran	CF 2 W 2.00		1 1.02		1 1.11			1 1.43				
41. Pesta	CF 1 W 1.00		1 1.02		1 1.11							

1	2	3	4	5	6	7	8	9	10	11	12	13
42. Jabalpur	CF W	1 1.00	1 1.02		1 1.11			1 1.43				
43. Sangara	CF W	2 2.00			1 1.11			1 1.43				
44. Santar	CF W	1 1.00	1 1.02			2 2.44						
45. Kumendha	CF W	1 1.00	1 1.02	1 1.11	1 1.11							
46. Anwan	CF W	1 1.00	1 1.02	1 1.11	1 1.11							
47. Achhah	CF W	2 2.00		1 1.11	1 1.11							
48. Kurram	CF W	2 2.00		1 1.11	1 1.11							
49. Pawaiya	CF W	1 1.00				1 1.22		1 1.43				
50. Majhiwan Sani	CF W	1 1.00		1 1.11	1 1.11							
51. Pawai	CF W	1 1.00		1 1.11	1 1.11							
52. Kusma	CF W	1 1.00		1 1.11	1 1.11							
53. Gujaini	CF W	1 1.00	1 1.02		1 1.11							

1	2	25	26	27	28	29	30	31	32	33	34	35	360
42. Jalalpur	CF W											4	4.56
43. Sangara	CF W											4	4.54
44. Santar	CF W											4	4.46
45. Kumendha Sani	CF W											4	4.24
46. Anwan	CF W											4	4.24
47. Achhah	CF W											4	4.22
48. Kurram	CF W											4	4.22
49. Pawaiya	CF W											3	3.65
50. Majhiwan Sani	CF W											3	3.22
51. Pawai	CF W											3	3.22
52. Kusma	CF W											3	3.22
53. Gujaini	CF W											3	3.13

Where CF = Number of Cumulative Function.

W = Weight of function.

1	2	25	26	27	28	29	30	31	32	33	34	35	360
42. Jalalpur	CF W											4	4.56
43. Sangara	CF W											4	4.54
44. Santar	CF W											4	4.46
45. Kumendha Sani	CF W											4	4.24
46. Anwan	CF W											4	4.24
47. Achhah	CF W											4	4.22
48. Kurram	CF W											4	4.22
49. Pawaiya	CF W											3	3.65
50. Majhiwan Sani	CF W											3	3.22
51. Pawai	CF W											3	3.22
52. Kusma	CF W											3	3.22
53. Gujaini	CF W											3	3.13

Where CF = Number of Cumulative Function.

W = Weight of function.

Table 3
Hierarchy of Service Centres in Tahsil Baberu

Sl. No.	Settlement Name	Total functions	Centrality Index	Population size	Rank
1	2	3	4	5	6
1.	Baberu T.A.	67	176.56	9695	1
2.	Bisanda T.A.	44	115.47	7193	2
3.	Kamasin	32	96.43	4595	3
4.	Oran T.A.	20	42.36	4147	4
5.	Murwal	16	25.47	4125	5
6.	Marka	13	20.52	3340	6
7.	Singhpur	13	19.95	4912	7
8.	Bhabhua	12	16.03	2431	8
9.	Bira	12	15.51	3129	9
10.	Sanda Sani	12	15.47	2639	10
11.	Bhadehdu	11	14.14	3263	11
12.	Chausad	11	13.82	3520	12
13.	Birraon	10	13.03	2402	13
14.	Chhilolar	10	12.81	2655	14
15.	Kurrahi	10	12.54	6465	15
16.	Aliha	10	12.39	3269	16
17.	Ingua	9	11.66	4061	17
18.	Augasi	9	11.55	1743	18
19.	Karhuli Muafi	9	11.42	1152	19
20.	Hardauli	9	10.11	7497	20
21.	Sathi	7	10.10	1633	21
22.	Melathu	7	9.60	1954	22
23.	Narainpur	7	9.05	1662	23
24.	Patwan	7	8.91	3773	24
25.	Pachhauha	7	8.31	3502	25

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1	2	3	4	5	6
1.	Baberu T.A.	67	176.56	9695	1
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3.	Kamasin	32	96.43	4595	3
4.	Oran T.A.	20	42.36	4147	4
5.	Murwal	16	25.47	4125	5
6.	Marka	13	20.52	3340	6
7.	Singhpur	13	19.95	4912	7
8.	Bhabhua	12	16.03	2481	8
9.	Bira	12	15.51	3129	9
10.	Sanda Sani	12	15.47	2689	10
11.	Bhadehdu	11	14.14	3263	11
12.	Chausad	11	13.82	3520	12
13.	Birraon	10	13.03	2402	13
14.	Chhilolar	10	12.81	2655	14
15.	Kurrahi	10	12.54	6465	15
16.	Aliha	10	12.39	3269	16
17.	Ingua	9	11.66	4061	17
18.	Augasi	9	11.55	1748	18
19.	Karhuli Muafi	9	11.42	1152	19
20.	Hardauli	9	10.11	7497	20
21.	Sathi	7	10.10	1633	21
22.	Melathu	7	9.60	1954	22
23.	Narainpur	7	9.05	1662	23
24.	Patwan	7	8.91	3773	24
25.	Pachhauha	7	8.31	3502	25

1	2	3	4	5	6
26.	Kairi	7	8.31	3596	26
27.	Musiwan	7	8.31	2964	27
28.	Palhari	6	7.92	2831	28
29.	Bagehta	6	7.62	2202	29
30.	Badagaon	6	7.30	2106	30
31.	Jamu	6	7.29	2746	31
32.	Tola Kalan	6	6.98	2091	32
33.	Baberu Rural	6	6.98	3606	33
34.	Mau	6	6.78	5469	34
35.	Siklodhi	5	6.50	1719	35
36.	Beunja	5	6.35	1469	36
37.	Lauli Tika Mau	5	6.18	2085	37
38.	Satnison	5	6.18	2191	38
39.	Majhiwan	5	5.56	2726	39
40.	Pindaran	5	5.56	3463	40
41.	Pesta	4	4.98	2042	41
42.	Jalalpur	4	4.56	2232	42
43.	Sangara	4	4.54	2748	43
44.	Santar	4	4.46	960	44
45.	Kumendha Sani	4	4.24	2363	45
46.	Anwan	4	4.24	1238	46
47.	Achhah	4	4.22	1220	47
48.	Kurram	4	4.22	2312	48
49.	Pawaiya	3	3.65	2620	49
50.	Majhiwan Sani	3	3.22	2919	50
51.	Pawai	3	3.22	1999	51
52.	Kusma	3	3.22	1456	52
53.	Gujaini	3	3.13	2073	53

(iii) Population size Vs. Centrality Score :

The centrality score of a service centre is closely related to the population size and complexity of function as performed by it¹³. The population size of a service centre mostly serves as a proxy variable for any existing and potential function. This is only because larger the population size, greater is attraction force of the centre to entice them over time. The regression analysis of a centrality score and population size shows a positive co-relation of high level ($r = + 0.5930165$) (Fig.5.1). But there are also such examples where population size is small and centrality score is high. This is only due to their favourable locations on transport route and better economic facilities. Marka, Murwal, Singhpur, Bhabhua, Beunja Birraon, Karhuli Muafi, Augasi, Melathu, Narainpur, Sathi, Santar and Achhah due to better accessibility have higher centrality score than Bira, Bhadehdu, Kurrahi, Aliha, Hardauli, Pachauhan, Kairi, Mau, Pindaran, Sangara and Pawaiye which in spite of their large population size are either located away from the main transport routes or have less developed activities. The efficient means of transportation and administration and rural banks have led to phenomenal growth of centres in the study area. Bisanda, Oran, Kamasin, Marka, Murwal, Birraon, Singhpur, Bhabhua, Beunja, Augasi, Karhuli Muafi and many others are such examples.

5.2 FUNCTIONAL HIERARCHY OF SERVICE CENTRES :

Many scholars have adopted their own methods of deciding the hierarchy of service centres. Gutt Man¹⁴ evolved the technique of a scalogram which was later on used by Hassinger¹⁵ to measure the centrality of service centres. The population threshold technique was used by Berry and Garrison¹⁶, to decide

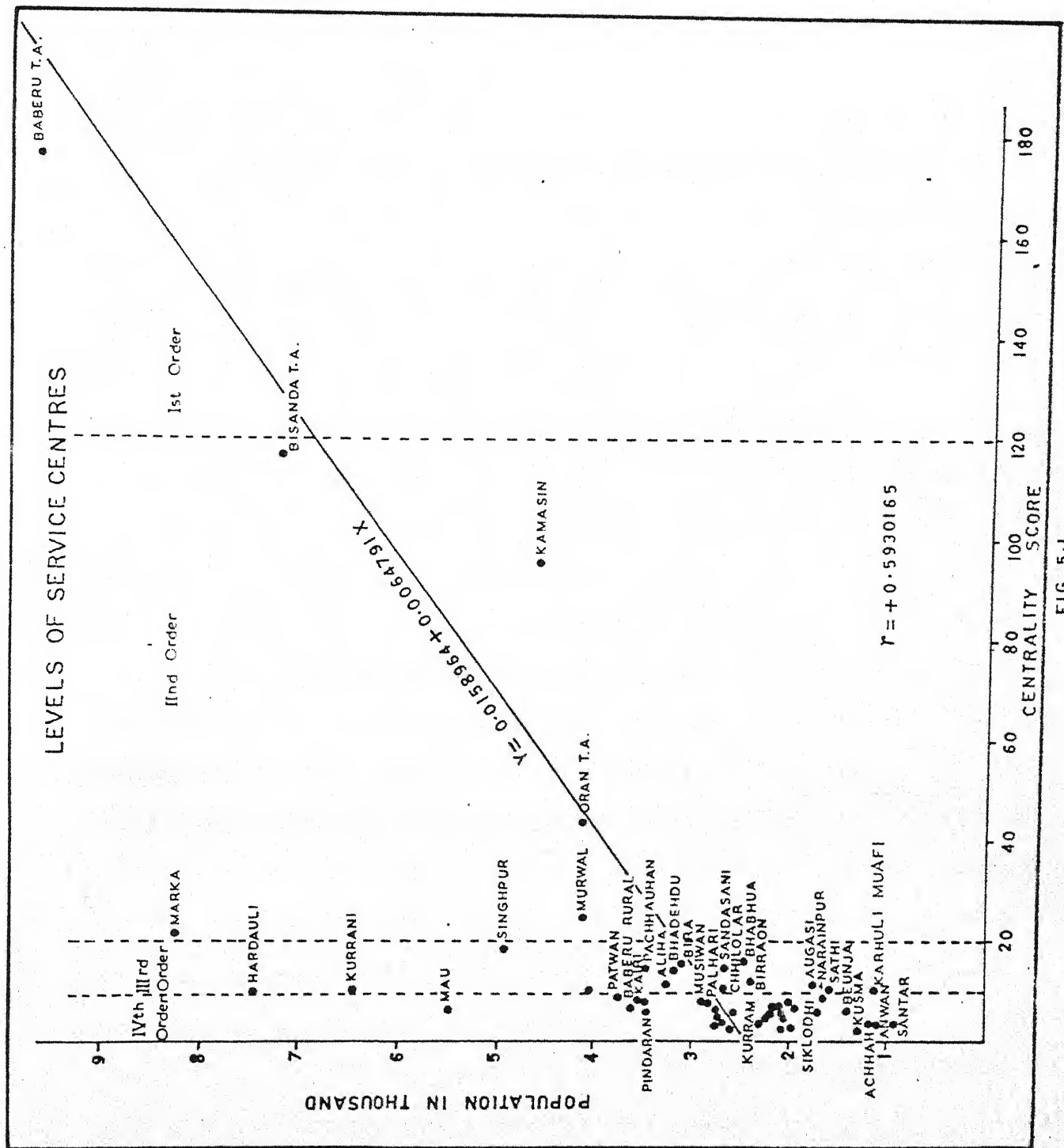


FIG. 5-1

the centrality. Godlund¹⁷ to study the hierarchy of settlements in Sweden, utilized the centrality index derived on the basis of economic activity also used by Singh¹⁸ in India. Dutta and Akron¹⁹ used the transportation index to determine the hierarchical level of settlements.

With the help of centrality scores derived as mentioned previously all the 53 service centres of the tahsil Baberu may be grouped into five order of hierarchy. Baberu town has the highest centrality score of 176.56 and is the biggest settlement of the study area. It is also the biggest business, transport, education medical and communication centre and commands a primate status in the whole study area. The tahsil has five second order centres i.e. Bisanda, Oran, Kamasin, Marka and Murwal. The centres have got nodal locations that is they are transportation centres, business centres, education centres as their surrounding are rich in agriculture operations. There are fertilizer depots and food grain markets. Bisanda has rice mills, Intermediate college, Commercial Bank, Co-operative Bank, Post Office, Police Station Veterinary Hospital, Primary Health Centre. Kamasin is also a blockhead quarter having, Intermediate college, primary health centre, Police Station, Post and Telegraph Office, Veterinary Hospital, Co-operative seed store, Multi purpose Co-operative Society, Allahabad Bank, Co-operative Bank etc. Oran is the town area and serves its surrounding as a business centre it has Junior High School. Dispensary, Post Office, Commercial Bank, Co-operative Seed Store, Chemist and Druggist Store and Telephone Centre, Co-operative Bank etc. Murwal village is a second largest village in the study area with road side location and support rural bank,

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stock man. head quarter, High School, Co-operative Society, Multipurpose Co-operative Society etc. Marka village is a very big village in tahsil Baberu and it serves Primary School, Hospital, Rural Bank, Post-Office, Police Station and V.L.W. head quarter etc. (Fig. 5.2).

The fifteen IIIrd order centres are mainly agricultural villages in the study region. They are Bhabhua, Augasi, Karhuli Muafi, Hardauli, Aliha, Sathi, Chausad, Bhadehdu, Kurrahi, Singhpur, Chhiban, Birraon, Sanda Sani, Bira and Ingua. They support the facilities of primary school, Dispensaries, Bus Stop, Aata Chakki, Post Office, Rural Development. There are thirty two IVth order Service Centres in the study area which are mostly agricultural villages of normal size and support primary schools, Dispensaries, Post-Offices, Junior High Schools and Rural Bank. A few of these centres have got road side locations and have started as new business centres. Such centres are Patwan, Beunja, Baberu Rural, Melathu, Majhiwan Sani, Pawaiya, Pachauhan and Mau, These villages meet out the service demands of the near by hamlets and small villages. The study region requires many more such centres to fulfil the needs of development of the small size villages and to make a field testing of rural development programme and policy.

5.3 DISTRIBUTION AND DISTRIBUTIONAL PATTERN OF SERVICE CENTRES :

The distribution of service centres at nyaya panchayat level in tahsil Baberu varies from 1 to 5. The Nyayapanchayats of Hardauli, Palhari and Kamasin have 5 and 4 service centres respectively. The nyayapanchayats of Nibhaur, Karhuli Muafi, Bhadehdu and Bisanda have 3 each, while the nyayapanchayats of Bhabhua, Paras, Bagehta, Badagaon, Chandrayal, Audaha and Parsauli have 2 each. All the rest nyayapanchayats have 1 service

BABERU TAHSIL SPATIAL DISTRIBUTION & HIERARCHY OF SERVICE CENTRES 1981

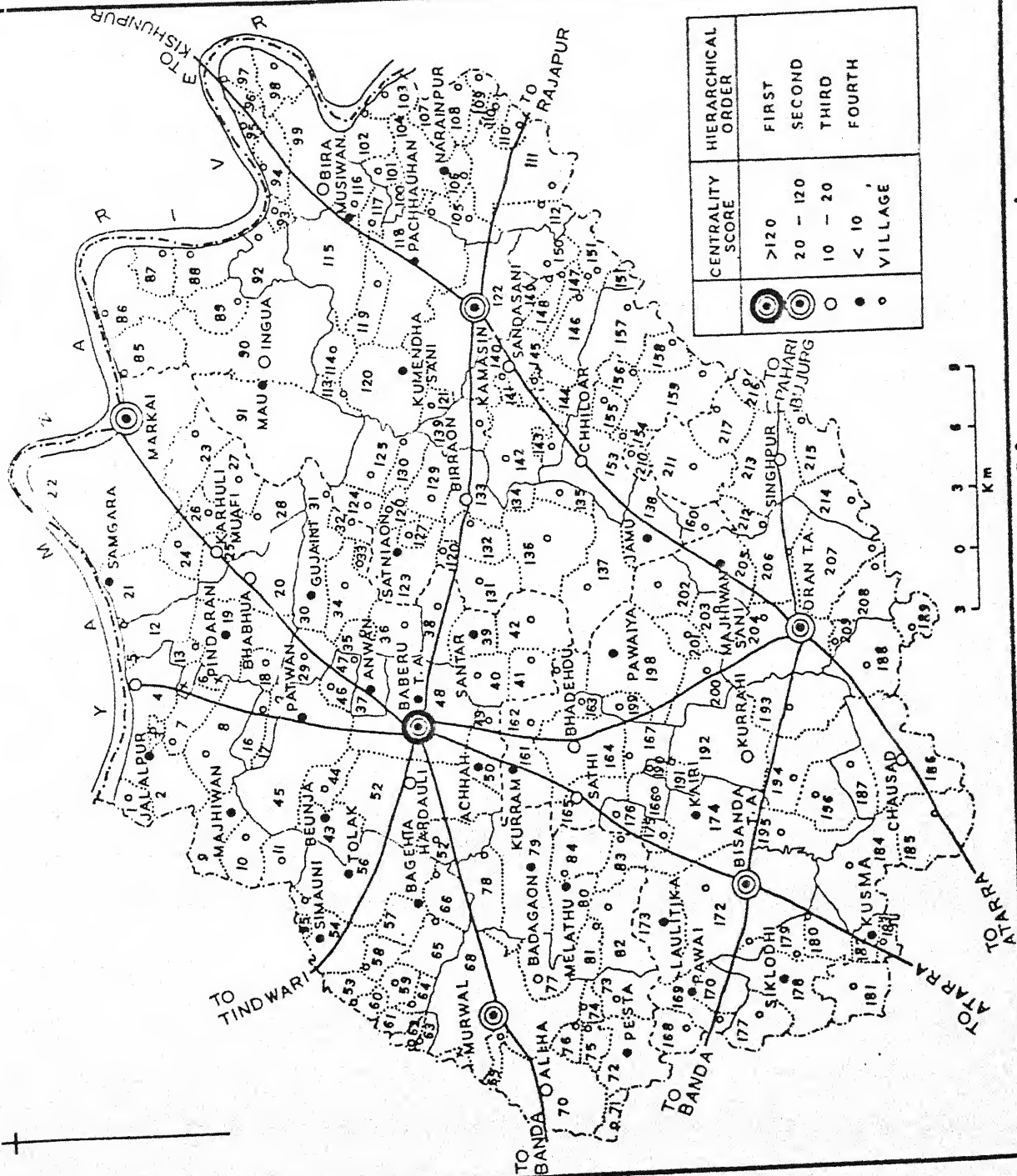


FIG. 5.2

centre each.

The existing pattern of service centres in any part of our country is the outcome of the forces of history and culture on the one hand and of economic and political exigencies on the other. As a result^{of} it the development of lower order service centres has been very much neglected. Therefore, there is a need to identify and develop these lower level service centres quite systematically to provide a package of goods and services that are necessary for micro level or integrated rural development. A number of scholars have worked to identify service centres in India. Wan Mali²⁰, Sen²¹, Singh²², Tripathi²³, Khan²⁴, Kumar and Sharma²⁵ and Roy and Patil²⁶ etc. have tried to identify rural service centres of various levels of hierarchy giving weights to some selected functions performed by the centres on the basis of their number and quality. But all the scholar differ on the point of numerical values given as weights. They explain the relative value of the central functions most of them have taken median threshold population as their criteria. Here the author has categorized all the 53 service centres of the study area into four orders on the basis of standard centrality score in hierarchical order.

As discussed above the nyayapanchayat wise distribution of service centre in tahsil Baberu is uneven. The nyayapanchayats which have only one service centre are purely agricultural and have uneven terrain. Mostly the head quarter of nyayapanchayats work as service centres of their adjacent areas.

The number of service centres at nyayapanchayat level is 1 to 5. The Hardauli nyayapanchayat occupies the foremost position having five service centres of various orders. The nyayapan-

chayats of Kamasin and Palhari secure the second place having 4 service centres each. The nyaya panchayats of Karhuli Muafi, Nibhaur, Bhadehdu and Bisanda have 3 servicecentres each mostly of IIIrd and IVth order. Bhabhus, Santar, Bagehta, Badageon, Chandrayal, Audaha and Parsauli nyaya panchayats have two service centres each generally of fourth order. Paras, Chausad, Kurrahi, Pawaiya, Oran Rural, Singhpur, Bira, Narainpur, Sanda Sani, Chhilar, Baberu T.A., Bisanda T.A. and Oran T.A. have only one service centre each (See table 4).

Table 4
Nyaya Panchayat/ T.A.wise distribution and density of service
Centres in Tahsil Baberu

Sl. No.	Nyaya Panchayat/ T.A.	Ist Order	IIInd Order	IIIrd Order	IVth Order	Total	Density 100 Km ²
1	2	3	4	5	6	7	8
1.	Nibhaur			1	2	3	1.94
2.	Bhabhus			1	1	2	2.27
3.	Karhuli Muafi		1	1	1	3	2.01
4.	Paras				1	1	2.45
5.	Santar				2	2	2.02
6.	Hardauli			1	4	5	2.32
7.	Bagehta				2	2	2.05
8.	Palhari		1	1	2	4	1.92
9.	Badageon				2	2	1.79
10.	Bhadehdu			2	1	3	2.52
11.	Bisanda				3	3	2.29
12.	Chandrayal				2	2	2.63
13.	Chausad			1		1	3.15
14.	Kurrahi			1		1	3.93
15.	Pawaiya				1	1	1.48

1	2	3	4	5	6	7	8
16.Oran					1	1	2.79
17.Singhpur				1		1	2.25
18.Audaha				1	1	2	1.76
19.Bira				1		1	2.23
20.Narainpur					1	1	2.58
21.Kamasin			1		3	4	1.78
22.Sunahuli					1	1	2.06
23.Parsauli				1	1	2	3.08
24.Sanda Sani				1		1	2.14
25.Chhilolar				1		1	2.10
26.Baberu T.A.	1					1	1.21
27.Bisanda T.A.			1			1	2.00
28.Oran T.A.			1			1	1.38
Total	1	5	15	32	53	62.13	

Where : T.A. = Town Area.

The pattern of distribution of service centres has been examined through the nearest neighbour techniques²⁷. The distribution of service centres shows a slight clustering tendency which is clear from the R_N values of IInd, IIIrd and IVth order service centres that is R_N values of second order service centre is $R_N = 0.170679$, that of IIIrd order centre is $R_N = 0.1276835$ and the R_N value of IVth service is $R_N = 0.1186681$.

5.4 HINTERLANDS OF CENTRES :

Hinterland is the service area of a centre. It includes its own area with other adjacent locality served by its service centres. Generally the hinter-land looks a continuous socio-economic

landscape around a service centre. The service centre and dependent settlements are the major components of a hinterland.

The scholars have used various qualitative and quantitative techniques to demarcate the hinterland. In 1933 Christaller used the centrality and hierarchy of centres as criteria of delimitation. In 1952 Green²⁸ and in 1956 Godlund²⁹ utilized the bus service data to demarcate the hinterland. In 1956 Bracey³⁰ utilized rural component of centrality in the demarcation of hinterland. In 1967 Berry utilized Reilly's Law of Retail Gravitation and breaking points technique³¹. In the present work the author has used the modified form of breaking point technique to delimit the hinterland of service centres of tahsil Baberu. The formula utilized for the purpose is given below :

$$B = \frac{AC}{AC + BC}$$

Where, D = distance between A and B service centres,

AC = Centrality score of A.

BC = Centrality Score of B, and

B = Breaking Point of A and B

The only first order service centre occupies the largest hinterland serving an area of 1589.09 Sq.Km. It is the administrative headquarter of the tahsil, where many important facilities are available. It is connected with the district head quarter and the interior part of the tahsil by road. It is an administrative, educational, industrial and medical centre. For the proper development of the town a well set plan pertaining to the development of the town ~~a well set plan pertaining to the development~~ the infra-structural facilities are required.

On the basis of the second order service centre the

region can be divided into five second order regions with in these regions. The Hinterland of third and fourth order service centres are nested in them. These five regions are Marka, Murwal, Bisanda town area, Oran town area and Kamasin (Fig. 5.3).

(i) Marka Region :

The service area of Marka service centre occupies the northern part of tahsil Baberu including the parts of Nibhaur, Karhuli Muafi and Bhabhua Nyaya Panchayats. Marka is the only largest village in the study area. It is situated on the southern bank of Yamuna river. It controls over the northern part of the tahsil having an area of 203.02 Sq.Km. It commands over 11 service centres 3 of IIIrd order such as Bhabhua, Augasi and Karhuli Muafi and 8 of IVth order such as Pindaran, Amwan, Gujaini, Santar, Patwan, Jalalpur, Majhiwan and Sangara with 23 villages with in its service area. At present it provides the services like Police Station, Post Office, Junior High Schools, Rural Development Bank, Hospital and small Industry etc. It served 23,406 persons in the region and is located at Baberu to Marka Road. Due to rich Gram, Wheat and Arhar cultivation in its surroundings it has emerged as a flour milling centre. It possesses potentials for the future development of various units of agrobased industry.

(ii) Murwal Region :

It controls over the south western part of the tahsil having an area of 235.94 Sq.Km. It is the second largest village of the tahsil Baberu and located on the Banda- Baberu district road. It commands over 11 service centres 2 of IIIrd order such as Hardauli and Aliha and 9 of IVth order service centers such as Beunja, Achhah, Baberu rural, Tola Kalan, Bagehta, Siklodhi, Pesta, Pawai and Palhari,

BABERU TAHSIL
INTERLANDS OF SERVICE CENTRES
1981

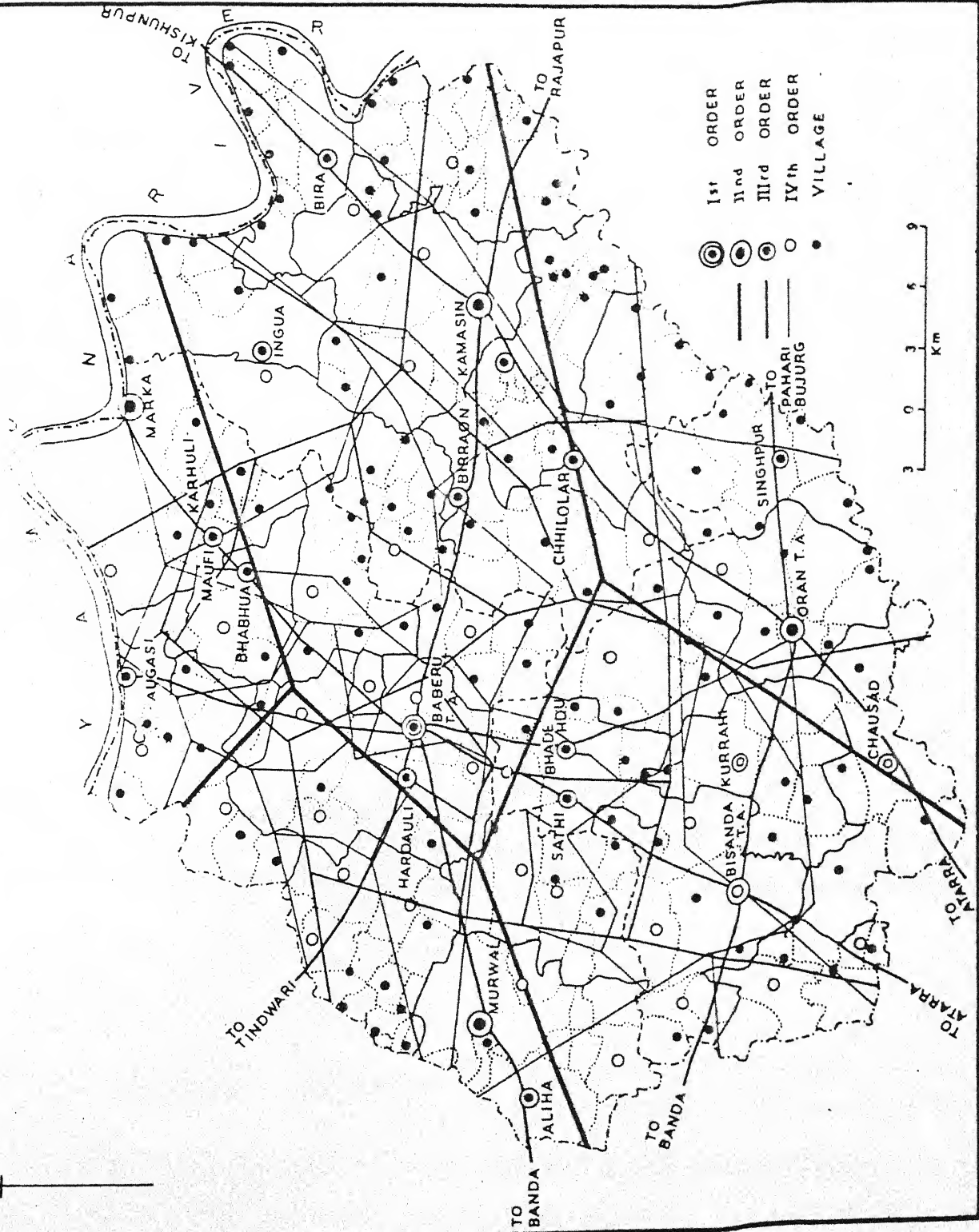


FIG.5.3

with 29 villages with in its service area. It serves the parts of Hardauli, Bagehta and few parts of Badagaon, Palhari and Nibhaur Nyaya Panchayats and meet out the service requirements of 43364 peoples (12.27 %) of the tahsil through various services like High School, Veterinary, Hospital, Despensary, Market, Post Office and Rural development bank etc.

(iii) Bisanda Region :

The Bisanda service centre is a progressive service area. It is situated on the Banda-Singhpur Bisanda district road. This region commands over the parts of Bhadehdu, Bisanda, Chandrayal, Chausad, Kurrahi and Pawaiya around Nyaya Panchayats. It covers an area of 385.94 Sq.Km. and meet out the service requirements of 101843 inhabitants of the region. It commands over 11 service centre 4 of IIIrd order and 7 of IVth order through various services like block head quarter, intermediate college, primary health centre, Commercial Bank, Co-operative Bank, Police Station, Telegraph Office, Public Call Office, Rice Milling Industry, Veterinary Hospital and whole sale market etc. Its service area is rich in paddy cultivation. in its surrounding. It has emerged as a rich milling centres. It passes potentials for the future development of various units of agrobased industry.

(iv) Oran Region :

Oran is the new developed town area of tahsil Baberu. This is the smallest region commanding over the parts of Singhpur, Chhilolar and Oran Nyaya Panchayats. It controls over an area of 279.12 Sq.Km. and 61713 persons. It possesses only 4 service centres two each of IIIrd order and IVth order. It serves the area and its people through the service like town area, Post- Office, Commercial Bank, Junior High School, Stock Man Centre, Co-operative Seed Store

multipurpose co-operative society etc. Its service area is rich in agricultural products. It is located on Banda-Singhpur-Bisanda district road serving about 40 villages (See table 5)

Table 5
IIIrd and IVth order Central Places and their Service Regions

Sl. No.	Regions	Centres			Area in Km ²	Population 1991	% of tahsil population	% of tahsil area	No. of villages	% of tahsil village
		IIIrd order	IVth order	Total						
1	2	3	4	5	6	7	8	9	10	11
1. Marka		3	8	11	208.02	36128	10.22	13.09	23	10.45
2. Murwal		2	9	11	235.84	43364	12.27	14.84	29	13.18
3. Bisanda		4	7	11	395.74	101843	28.80	24.27	52	23.64
4. Oran		2	2	4	279.12	61713	17.45	17.56	40	18.18
5. Kamasin		4	6	10	478.65	97230	27.50	30.12	74	33.64
Total		15	32	47	1579.37	340278	96.24	99.38	218	99.09

(v) Kamasin Region :

Kamasin region is a very important part of tahsil Baberu. This is situated on Banda-Kamasin-Baberu road and command 478.65 Sq.Km. area of the tahsil including parts of Audaha, Bira, Narainpur, Kamasin, Sunahuli, Parsauli, Sanda Sani and Chhilolar Nyaya Panchayats. During the British period it had been tahsil head quarter. It's region is a very backward area of the tahsil Baberu. It commands over 10 service centres 4 of IIIrd order and 6 of IV order service centres. through various service like block head quarter, Intermediate college, Police Station, Post Office, Primary Health Centre, Veterinary Hospital, Small Industry and Commercial Bank etc. It extends services to the population of 36128 people i.e. 10.22 % of the tahsil's total population(See table 6).

Table 6

Area and Population Served by the Ist, IInd, IIIrd
and IVth Order Service Centres in
Tahsil - Baberu

Ist Order				IInd Order			
Centres	No. of villages served	Area served Km ²	Popula- tion served	Centres	No. of villages served	Area served Km ²	Popula- tion served
1	2	3	4	5	6	7	8

1. Baberu	220	1539.09	353579	1. Marka	23	209.02	36128
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2. Murwal	29	235.84	43364
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3. Bisanda	52	385.74	101843
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1	2	3	4	5	6	7	8
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4.Oran	40	279.12	61713
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5.Kamasin	74	479.65	97230
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220	1599.09	353579
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213	1579.37	340278
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IIIrd Order				IVth Order			
Centres	No. of villages served	Area served Km ²	Population served	Centres	No. of villages served	Area served Km ²	Population served
9	10	11	12	13	14	15	16
1. Bhabhua	19	106.89	23406	1. Pindarn	6	24.35	5343
				2. Anwan	3	10.54	2386
				3. Gujaini	2	19.11	3928
				4. Santar	6	36.84	7225
2. Augasi	18	110.02	20996	5. Patwan	6	42.64	9543
				6. Jalalpur	4	26.99	4417
				7. Majhiwan	2	23.82	4106
3. Karhuli Muafi	5	36.50	6203	8. Sangara	3	20.67	3866
4. Hardauli	7	71.26	14743	9. Beunja	2	12.52	2245
				10. Achhah	1	5.47	1220
				11. Waberu Rural	2	10.91	2268
				12. Tola Kalan	10	48.93	8370
5. Aliha	29	141.47	32318	13. Bagehta	7	28.08	6775
				14. Siklodhi	5	32.94	6292
				15. Pesta	4	19.94	3387
				16. Pawai	2	12.67	2653
				17. Palhari	6	25.89	5868
6. Sathi	10	69.85	13715	18. Badagaon	2	26.19	3860
				19. Korram	2	13.35	3968
				20. Melathu	3	25.44	6104
7. Chausad	10	84.16	24826	21. Kusama	14	130.78	34406
8. Bhadehdu	12	72.46	17463	22. Pawaiya	8	46.24	9276

9	10	11	12	13	14	15	16
9. Kurrahi	10	92.92	29961	23. Kairi	5	44.19	12139
				24. Lauhi Tika Mau	5	23.07	4938
10. Singhpur	17	135.31	28745	25. Majhiwan Sani	8	48.92	13999
11. Chhilolar	9	68.25	16679	26. Jamu	8	51.54	13981
12. Birraon	15	95.91	19830	27. Kumendha Sani	3	24.22	3893
				28. Satniaon	10	42.33	8934
13. Sanda Sani	25	132.45	25433	29. Narainpur	29	138.78	25938
				30. Pachhauhan	4	38.76	7099
14. Bira	15	90.32	14361	31. Musiwan	11	53.16	8953
15. Ingua	10	110.39	19412	32. Mau	13	107.91	19939
	211	1425.05	306691		196	1216.09	256115

5.5 SPATIO-FUNCTIONAL GAPS :

The distribution of existing service centres exhibits vast unserved areas in the Western, eastern and southern part of the tahsil. Narainpur, Bira, Sanda Sani, Chausad, Singhpur, Paras, Sunahuli and Chhilolar nyaya panchayats have only one of the fourth order service centres and Bhabhua, Santar, Bagehta, Badageon, Chandrayal, Audaha and Parsauli have 2 service centres of IIIrd and IVth order centres. Similarly the nyaya panchayats of Nibhaur, Karhuli Muafi, Bhadehdu and Bisanda ^{are} ~~are~~ the production rich in the ^{production of} paddy, wheat, gram, pulses and oil seeds etc. The Kamasin, Hardauli and Palhari nyaya panchayats are very developing areas ^{as compared to} ~~of the~~ other nyaya panchayats. Hardauli nyaya panchayat commands over 5 service centres 1 of IIIrd order and 4 of IVth order, Palhari nyaya panchayat commands over 4 service centres 1 of IInd order I of IIIrd order and 2 of IVth order service centres and Kamasin nyaya panchayat commands over 4 service centres 1 of IInd over and 3 of IVth order service centres. These are located at Banda-Kamasin-Baberu district road. Hence a few new developing service centres having population size from 400 to 4500 people and minimum mutual distance of 3 Kms. have been suggested for future planning and economic development of the study area. Besides, these proposed service centres will also fill up the locational gaps and promote the level of existing service centres. The proposed service centres are of IVth order having atleast one service and mutual distance of 3 Km. with a population range of 450 to 4500 persons. The following table 7 and fig. 5.4 gives the location of proposed service centres.

**BABERU TAHSIL
EXISTING & PROPOSED
SERVICE CENTRES**

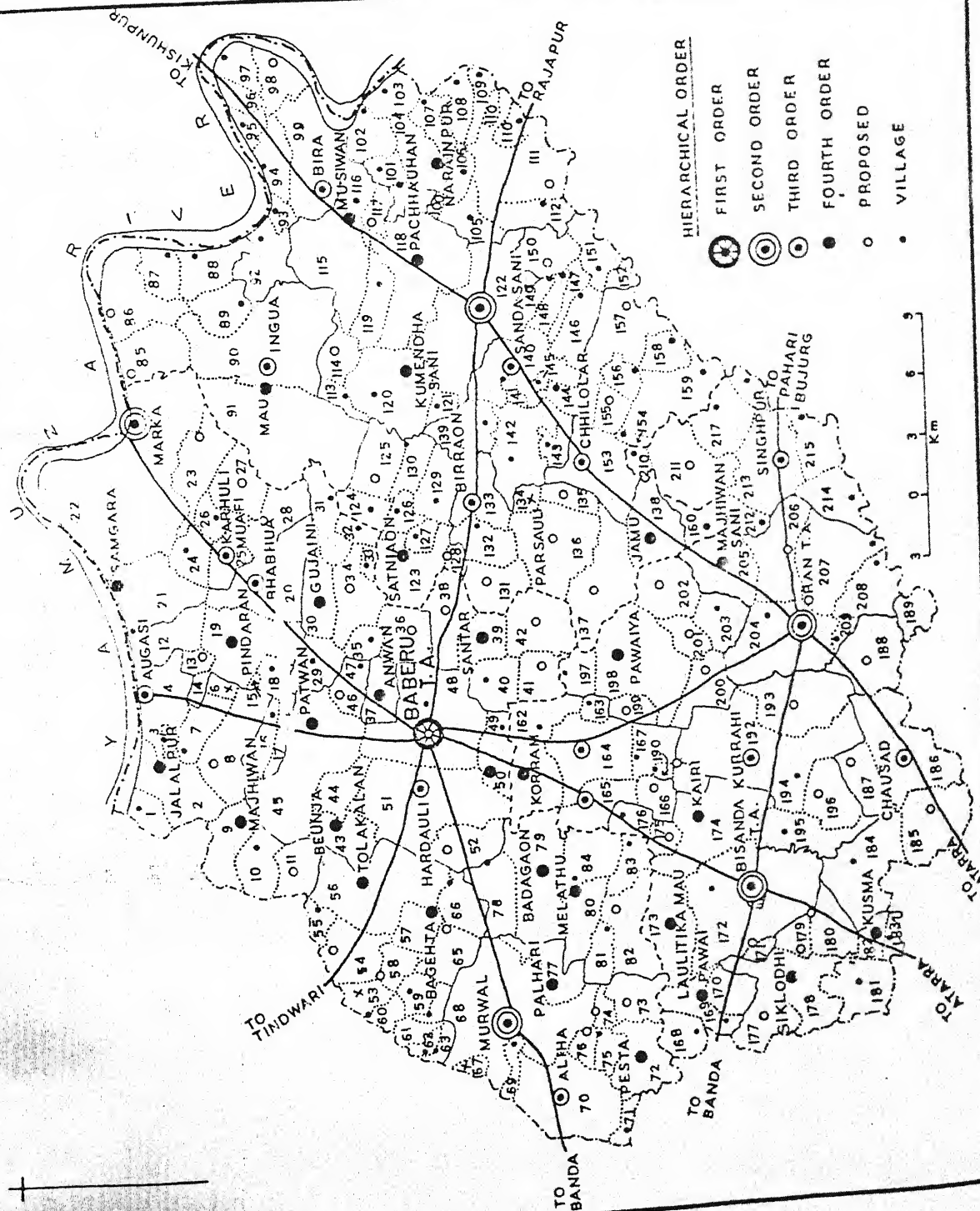


FIG. 5-4

Table 7
Proposed Service Centres in Various Nyaya Panchayats of
Tahsil Baberu

Sl. No.	Service centres	Population (1991)	Nyaya Panchayats
1	2	3	4
1. Nibhaur	2092	Nibhaur	
2. Bagheila	941	"	
3. Miyan Barauli	1272	Bhabhua	
4. Mantha	969	"	
5. Sham Suddinpur	693	"	
6. Sanda	1861	Karhuli Musafi	
7. Adhaon	1295	"	
8. Paras	1955	Paras	
9. Poon	1491	"	
10. Rayan	2250	Santar	
11. Bhadwari	776	Hardauli	
12. Tharthua	606	"	
13. Simauni	3136	Dagehata	
14. Pandari	1341	"	
15. Janwara	500	Palhari	
16. Korari	521	"	
17. Daftara	858	Bhadehdu	
18. Korra Khurd	631	Bisanda	
19. Ghoori	965	"	
20. Chandrayal	641	Chandrayal	
21. Punahur	4451	"	
22. Ballan	4367	Chausad	
23. Nandan Mau	2062	"	
24. Tendura	4119	"	

1	2	3	4
25.	Dabhani	3132	Kurrahi
26.	Bagha	4233	"
27.	Bachhaudha	1032	"
28.	Marauli	2362	Pawaiya
29.	Belden	909	"
30.	Jorahara	1907	"
31.	Shahpursani	2039	Oran rural
32.	Ranipur	2729	Singhpur
33.	Arwari	1339	Audaha
34.	Amedhi	1206	Bira
35.	Bena Mau	1014	Narainpur
36.	Pannah	1193	Kamasin
37.	Sikari Lakhanpur	694	"
38.	Gurauli Uperhar	492	Sunahuli
39.	Sunahula	450	"
40.	Bhanti	940	Sunahuli
41.	Budhauri	1007	"
42.	Terayan	2175	Parsauli
43.	Kurra Bujurg	1768	"
44.	Binwat	1455	"
45.	Banthari	1518	Sanda Sani
46.	Kharauli	1345	"
47.	Mamsi Khurd	2399	Chhilolar
48.	Chakrehi	2471	"

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CHAPTER - SIX
AGRO INDUSTRIAL DEVELOPMENT AND FUTURE PLAN

6.1 AGRICULTURAL PLANNING :

Agriculture being the mainstay of regional economy requires a well set plan. Here, three parts of agricultural planning have been suggested to be implemented:

- (i) Extensive agricultural planning
- (ii) Intensive agricultural planning
- (iii) Agricultural Infra structural planning

(1) Extensive Planning :

This part of planning suggests the extension of nett sown area by taking fallow and reclaiming barren land under cultivation.

In intense planning the planner's task is to determine to make optimum use of each acre of land in the national interest¹.

The area under study comprises of 4.55 % fallow land and 4.68 % cultivable waste of the nett sown area. These items provide an opportunity for the expansion of nett cropped area. If the government agency like the directorate of agriculture and the department of soil conservation extend their help in reclaiming the barren and waste lands, the possibility and feasibilities of bringing these area of under cultivation, become more sticky. The only hindrance in bring^{ing} the barren lands under the cultivation is low economic feasibility. If the villagers and these departments provided proper guidance and help the nett cropped area can be increased to 89.15 %.

Improving the cultivable waste :

The areas which are physically handicapped due to the erosive, nature of rivers and nalas running in the study area can be improved and brought under cultivation. Such areas lie in the nyaya panchayats of Bira, Audaha, Singhpur, Nibhaur and Karhuli Muafi etc. The rivers of Bagain and Garara may be channelled by making embankments on both the sides. It would be very easy to reclaim the undulating ravinous

areas by levelling with mechanical and Manual devices. Thus, about 7420 hectares of cultivable waste can be brought under cultivation with in a period of 10 to 15 years. The following table projects the area of cultivable waste, fallow land, barren land and nett cropped area in different nyaya panchayats for 2000 A.D.

Table 1
Planning for Agricultural Development at the turn of the Twentieth Century.

(Area in hectares)							
Sl. No.	Nyaya Panchayat	Fallow land	% of nett cropped area	Culti-vable waste	% of nett cropped area	Barren and unculti-vable waste	% of nett cropped area
1	2	3	4	5	6	7	8
1. Nibhaur	E	397	8.71	724	15.90	909	17.74
	P	106	0.31	15	0.26	-	-
2. Bhabhua	E	106	2.72	175	4.49	193	4.95
	P	9	0.21	8	0.19	-	-
3. Karhuli Muafi	E	103	1.19	162	1.87	177	2.04
	P	5	0.01	4	0.04	-	-
4. Paras	E	73	2.20	132	3.97	117	3.52
	P	3	0.09	3	0.09	-	-
5. Santar	E	75	2.24	144	4.31	131	3.92
	P	4	0.11	6	0.16	-	-
6. Hardauli	E	537	8.35	388	6.03	1057	16.43
	P	19	0.25	8	0.10	-	-
7. Bagehta	E	136	2.62	295	5.70	244	4.71
	P	5	0.09	5	0.09	-	-
8. Palhari	E	282	4.12	361	5.27	455	6.65
	P	12	0.16	9	0.12	-	-
9. Badagaon	E	168	3.48	237	4.91	317	6.57
	P	8	0.15	5	0.09	-	-
Total Block Baberu	E	1877	3.98	2618	5.56	3499	7.73
	P	93	0.16	63	0.12	-	-

Sl. No.	Nyaya Panchayats	Nett cropped area	% of total nett cropped area	Double cropped area	% of nett cropped area	Gross cropped area	% of total gross cropped area
1	2	9	10	11	12	13	14
1. Nibhaur	E	4553	3.58	616	13.52	5169	3.30
	P	5641	3.99	1418	25.13	7059	3.73
2. Bhabhua	E	3996	3.07	512	13.14	4408	2.81
	P	4160	2.94	1122	26.97	5282	2.79
3. Karhuli Muafi	E	9646	6.81	1264	14.61	9910	6.32
	P	8902	6.30	2210	24.82	11112	5.87
4. Paras	E	3318	2.61	218	6.57	3536	2.25
	P	3517	2.49	516	14.67	4033	2.13
5. Santar	E	3337	2.62	713	21.36	4090	2.61
	P	3546	2.51	1214	34.23	4760	2.51
6. Hardeuli	E	6431	5.06	1228	19.09	7659	4.89
	P	7329	5.19	2012	27.45	9341	4.93
7. Bagehta	E	5172	4.07	29	0.56	5201	3.32
	P	5593	3.96	210	3.75	5803	3.06
8. Palhari	E	6839	5.38	810	11.94	7649	4.88
	P	7461	5.28	1315	17.62	8776	4.63
9. Badagaon	E	4819	3.79	1327	27.53	6146	3.92
	P	5211	3.69	2118	40.64	7329	3.87
Total Block Baberu	E	47051	37.08	6717	14.27	53768	34.33
	P	51360	36.40	12135	23.62	63495	33.56

Sl. No.	Nyaya Panchayat	Rabi cropped area	% of nett cropped area	Kharif cropped area	% of nett cropped area	Zaid cropped area	% of nett cropped area
1	2	15	16	17	18	19	20
1. Nibhaur	E	3243	71.22	1926	42.30	-	-
	P	4692	82.99	2358	41.80	7	0.12
2. Bhabhua	E	3091	79.08	1327	34.06	-	-
	P	3911	94.01	1361	32.71	4	0.09
3. Karhuli Muafi	E	7575	87.61	2335	27.00	-	-
	P	9213	92.26	2819	31.66	22	0.24
4. Paras	E	2045	61.63	1491	44.93	-	-
	P	2532	71.99	1462	41.56	12	0.34
5. Santar	E	2771	83.03	1319	39.52	-	-
	P	3169	89.36	1584	44.67	2	0.05
6. Hardauli	E	5465	94.97	2194	34.11	-	-
	P	6597	90.01	2699	36.68	15	0.20
7. Bagehta	E	3040	58.77	2161	41.78	-	-
	P	3572	63.96	2219	39.67	5	0.08
8. Palhari	E	5271	77.07	2378	34.77	-	-
	P	6165	82.62	2563	34.35	12	0.16
9. Badagaon	E	4449	92.32	1697	35.21	-	-
	P	5026	96.44	2229	42.77	21	0.40
Total Block Baberu	E	36940	79.51	16828	35.76	-	-
	P	43867	85.41	19284	37.54	100	0.19

Sl. No.	Nyaya Panchayat		Purified area for sugar cane	% of nett cropped area	Irrigated area	% of nett cropped area	Gross irrigated area	% of nett cropped area
1	2		21	22	23	24	25	26
1. Nibhaur	E		-	-	492	10.80	878	19.28
	P		12	0.21	676	11.98	928	16.45
2. Bhabhua	E		-	-	579	22.56	1222	31.36
	P		6	0.14	1263	30.36	1567	37.66
3. Karhuli Musafi	E		-	-	2597	30.03	2577	33.27
	P		58	0.65	3511	39.44	3511	42.91
4. Paras	E		-	-	148	4.46	292	8.80
	P		27	0.76	218	6.19	329	9.35
5. Santar	E		-	-	619	18.54	576	26.25
	P		5	0.14	915	25.80	1032	29.10
6. Hardauli	E		-	-	2911	45.26	3178	49.41
	P		40	0.54	3528	48.13	3803	51.88
7. Bagehta	E		-	-	99	1.91	229	4.42
	P		7	0.12	139	2.48	314	5.61
8. Palhari	E		-	-	705	10.30	1082	15.82
	P		36	0.48	1035	13.87	1326	17.77
9. Badagaon	E		-	-	963	19.98	1162	24.11
	P		53	1.01	1296	24.87	1522	29.20
Total Block Baberu	E		-	-	9413	20.00	11796	25.07
	P		244	0.47	12581	24.49	14632	28.48

1	2	3	4	5	6	7	8
10. Audaha	E	486	6.09	404	5.06	234	2.93
	P	11	0.12	6	0.06	-	-
11. Bira	E	394	12.23	329	10.22	435	13.51
	P	12	0.30	4	0.10	-	-
12. Narainpur	E	356	7.90	480	10.52	746	16.35
	P	9	0.16	5	0.09	-	-
13. Kamasin	E	338	4.29	317	4.02	510	6.47
	P	8	0.09	3	0.03	-	-
14. Sunahuli	E	337	10.35	59	1.91	376	11.55
	P	10	0.27	4	0.11	-	-
15. Parsauli	E	297	5.55	227	4.24	302	5.65
	P	6	0.10	8	0.13	-	-
16. Senda Sani	E	328	6.21	292	5.52	339	6.41
	P	12	0.20	5	0.08	-	-
17. Chhilolar	E	279	7.04	326	8.23	398	10.05
	P	16	0.35	9	0.06	-	-
Total Block Kamasin	E	2815	6.78	2434	5.96	3340	8.05
	P	84	0.18	44	0.09	-	-
18. Bhadehdu	E	185	5.01	130	3.52	222	6.01
	P	9	0.20	3	0.07	-	-
19. Bisenda Rural	E	390	5.34	300	4.71	238	3.26
	P	13	0.16	7	0.08	-	-
20. Chandrayal	E	294	7.94	243	6.56	177	4.78
	P	6	0.14	5	0.11	-	-
21. Chausad	E	163	2.89	237	4.20	206	3.65
	P	5	0.08	6	0.09	-	-

1	2	9	10	11	12	13	14
10. Audaha	E	7990	6.28	62	0.77	9042	5.13
	P	9953	6.27	129	1.45	9992	4.74
11. Bira	E	3219	2.53	16	0.49	3235	2.06
	P	3926	2.78	95	2.16	4011	2.11
12. Narainpur	E	3560	3.59	255	5.59	4915	3.07
	P	5392	3.91	417	7.74	5799	3.06
13. Kamasin	E	7876	6.20	876	11.12	9752	5.58
	P	9520	6.03	1586	18.61	10106	5.34
14. Sunahuli	E	3253	2.56	38	1.16	3291	2.10
	P	3635	2.57	103	2.93	3738	1.97
15. Parsauli	E	5343	4.21	1296	24.25	6639	4.23
	P	5853	4.14	2210	37.75	9063	4.26
16. Sanda Sani	E	5281	4.16	923	15.58	6104	3.99
	P	5884	4.17	1501	25.50	7385	3.90
17. Chhilolar	E	3959	3.12	898	22.68	4857	3.10
	P	4539	3.21	1599	35.00	6128	3.23
Total Block Kamasin	E	41471	32.68	4264	10.20	45735	29.21
	P	46592	33.02	7620	16.35	54212	28.65
18. Bhadehdu	E	3688	2.90	2399	65.04	6087	3.88
	P	3992	2.82	3128	78.35	7120	3.76
19. Bisanda Rural	E	7293	5.74	1644	22.54	8937	5.70
	P	7963	5.64	2316	29.08	10279	5.43
20. Chandrayal	E	3702	2.91	1962	50.29	5564	3.55
	P	4228	2.99	2914	66.55	7042	3.72
21. Chausad	E	5638	4.44	3407	60.42	9045	5.77
	P	6027	4.27	5168	85.74	11195	5.91

1	2	15	16	17	18	19	20
10. Audaha	E	5505	68.98	2537	31.79	-	-
	P	6219	70.24	2748	31.04	6	0.06
11. Bira	E	2012	62.50	1223	37.99	-	-
	P	2626	66.98	1367	34.91	7	0.17
12. Narainpur	E	3310	72.58	1505	33.00	-	-
	P	3995	74.04	1792	33.29	9	0.16
13. Kamasin	E	5626	71.43	3123	39.65	3	0.03
	P	6519	76.51	3460	40.61	41	0.48
14. Sunahuli	E	1915	58.96	1376	42.29	-	-
	P	2321	63.95	1401	38.54	6	0.16
15. Parsauli	E	4114	76.99	2524	47.23	1	0.01
	P	5515	94.22	2531	43.24	6	0.12
16. Sanda Sani	E	4211	79.73	1891	35.90	2	0.03
	P	5402	91.80	1962	33.34	7	0.11
17. Chhilolar	E	3107	78.47	1649	41.65	1	0.02
	P	3998	85.87	2193	50.20	15	0.33
Total Block Kamasin	E	39900	96.21	15828	38.16	7	0.01
	P	36495	78.30	17454	37.46	97	0.20
18. Bhadehdu	E	3224	87.41	2960	77.54	3	0.08
	P	3982	99.74	3099	77.63	12	0.30
19. Bisanda Rural	E	6679	91.58	2250	30.85	7	0.09
	P	7813	98.11	2369	29.75	39	0.48
20. Chandrayal	E	3336	90.11	2228	60.13	-	-
	P	4016	94.98	2983	70.55	13	0.30
21. Chausad	E	4939	87.60	4106	72.92	-	-
	P	6014	99.78	5112	84.91	21	0.34

1	2	21	22	23	24	25	26
10. Audaha	E	-	-	128	1.60	286	2.33
	P	9	0.10	198	2.23	219	2.47
11. Bira	E	-	-	32	0.99	45	1.39
	P	11	0.28	65	1.65	76	1.93
12. Narainpur	E	-	-	689	15.10	947	20.76
	P	13	0.24	912	16.94	1028	19.10
13. Kamasin	E	-	-	1651	20.90	2012	25.54
	P	86	1.00	2069	24.28	2301	27.00
14. Sunahuli	E	-	-	198	6.08	209	6.42
	P	10	0.27	238	6.54	287	7.89
15. Parsauli	E	-	-	1967	36.81	2366	44.28
	P	11	0.18	2317	43.87	2986	51.01
16. Sanda Sani	E	-	-	1409	26.68	1892	35.82
	P	14	0.23	1712	29.09	2134	36.26
17. Chhilolar	E	-	-	1782	45.01	2282	57.64
	P	22	0.48	1962	43.22	2569	56.59
Total Block Kamasin	E	-	-	7856	18.94	9939	23.96
	P	176	0.37	9473	20.33	11600	24.99
18. Bhadehdu	E	-	-	2640	71.58	3351	90.86
	P	27	0.67	3018	75.60	4061	101.72
19. Bisanda Rural	E	1	0.01	1885	25.84	2606	35.73
	P	58	0.72	2546	31.97	3112	39.08
20. Chandrayal	E	-	-	2102	56.78	2518	76.12
	P	30	0.70	2119	50.11	3292	77.86
21. Cheused	E	-	-	3643	64.61	4365	77.42
	P	48	0.79	3913	64.92	4836	80.23

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1	2	3	4	5	6	7	8
	E	107	6.51	293	6.11	205	4.35
22.Kurrahi	P	10	0.13	4	0.07	-	-
	E	189	4.96	205	5.27	199	4.96
23.Pewaiya	P	3	0.13	3	0.07	-	-
	E	370	8.03	115	2.51	256	5.59
24.Oran Rural	P	9	0.17	2	0.03	-	-
	E	638	13.03	850	17.42	403	8.36
25.Singhpur	P	19	0.30	15	0.23	-	-
Total Block	E	2536	6.60	2363	6.17	1901	4.95
Bisanda	P	73	0.13	45	0.10	-	-
	E	7223	5.69	7420	5.34	4740	6.33
Total	P	245	0.17	152	0.10	-	-

1	2	15	16	17	18	19	20
22. Kurrahi	E	4531	96.19	3613	76.70	-	-
	P	5215	98.56	4905	90.91	23	0.43
23. Pawaiya	E	3553	91.45	2527	65.04	-	-
	P	4111	96.32	4038	94.61	14	0.32
24. Oran Rural	E	4068	89.93	2791	60.90	-	-
	P	4987	99.79	3296	65.29	21	0.41
25. Singhpur	E	3831	78.55	2570	52.69	-	-
	P	6193	97.92	3015	47.62	14	0.22
Total Block Bisanda	E	34164	89.04	22935	59.77	10	0.02
	P	42331	98.10	28717	66.55	158	0.36
Total	E	101003	79.59	55591	43.91	17	0.01
	P	122693	86.94	65455	46.38	354	0.25

1	2	21	22	23	24	25	26
22. Kurrahi	E	-	-	3675	73.02	4380	92.99
	P	43	0.81	4018	75.94	4870	92.04
23. Pawaiya	E	-	-	2117	54.49	3424	88.23
	P	36	0.94	2615	61.26	3982	93.29
24. Oran Rural	E	-	-	2515	54.99	3241	70.95
	P	30	0.59	2791	55.28	3793	75.13
25. Singhpur	E	-	-	1768	36.25	2487	50.99
	P	26	0.41	2374	37.49	2891	45.66
Total Block Bisaula	E	1	0.002	20945	54.59	26676	69.52
	P	298	0.69	23394	54.21	30837	71.46
Total	E	1	0.0007	38214	30.11	48411	38.15
	P	718	0.50	45448	32.20	57069	40.44

Where : E = Existing Agricultural Land use (1982-83)

P = Proposed Agricultural land use (2000).

From the above table it is evident that the patches of fallow land and cultivable waste lie mainly in the nyaya panchayats of Singhpur, Addaha, Oran rural, Bhadehdu, Sunahuli, Hardauli and Nibhaur. To bring these patches under cultivation the following measures should be adopted.

- (i) the pavement of river sides.
- (ii) afforestation of affected area
- (iii) Levelling with the bulldozers and man power, and
- (iv) growing of legumes for increasing the soil fertility.

Minimization of fallow land :

Only 30.12 % of nett cropped area gets irrigational facilities and the rest depends on the favour of rains which is limited in the months of July, August and September. Therefore, to minimize the practice of fallowing an alternate arrangement for irrigation should be made. The drilling of tube wells, making of bundhies and provision of lift canal from the Yamuna river should be introduced to feed the fallow land with water. The nyaya panchayats Bira, Bagehta, Audaha and Paras should be provided irrigation. Thus about 7353 of area can be brought under irrigation and thus under cultivation.

(ii) Intensive planning :

As the area for horizontal expansion of cultivable land is limited in the tahsil, the intensive planning of agriculture becomes essential by adopting modern innovations such as high yielding variety seeds, use of fertilizers, means of irrigation, use of pesticides and insecticides, use of threshers, winnowing fans and other machinery. At the same time, the yield of various crops and their intensity, the types of crops grown in the field and the proportion of sown area brought under different crops are the important

dimensions which must be considered while intensifying the cultivation of the study area. The study area suffers from the under use of cultivated land as only 11.32 % of its nett cultivated area is re-sown. The second crop provides very low yield because of very limited growth period. The potentialities for intensification of the regional agriculture widely exist. It is remarkable to say that unless a well organised agricultural infrastructure is provided the desired targets can not be achieved. If only the item of irrigation is provided to the cultivated area of the region, the total yield and gross cropped area can be increased upto a considerable extent. The provision of the means of irrigation shall increase double cropped area at par. At the same time it shall increase the use of chemical fertilizers and ultimately the yield of different crops. In this way the cropping intensity shall automatically increase and will lead to high productivity. The following lines give some proposals for increasing the cropping intensity.

Suggestions for enlarging cropping intensity :

The cropping intensity denotes to the number of crops grown in a field during one crops cyclic year. It is one of the best factors for enhancing the economy of cultivators and is the most promising way to grow more foodgrains. The field survey of study area shows the sufficient changes for increasing the double/triple crop area. At present the area sown more than once is about 23.42 % of the nett cropped area. Where as irrigated area is about 30.12 %. Table no.1 shows the irrigated and double cropped areas of various nyaya panchayats in tahsil Baberu.

Categories for increasing cropping intensity :

The study area can be divided into five categories of nyaya panchayats on the basis of double cropped area to the nett sown area

for increasing the cropping intensity. Lower the percentage of double cropped area higher is the potential for increasing the intensity of crops (See table 2 and fig. 6.1 A).

(i) First Category :

This category includes the nyaya panchayats having double cropped area below 15 % of its nett cropped area. The nyaya panchayats of Nibhaur, Kamasin, Bhabhua, Karhuli, Muafi, Paras, Bagehta, Palhari, Sunahuli, Bira, Audaha and Narainpur fall under this category. If the infra-structural inputs specially irrigational facilities are added these nyaya panchayats can respond high potentialities for increasing the intensity of crops. These nyaya panchayats have undulating topography where construction of canals and digging of tube wells due to very low water table is very much difficult. However, the lift irrigation through pump canals at suitable locations along the river Yamuna can be developed and about 50 % area of the tahsil can be brought under double cropping.

(ii) Second category :

It includes such areas where the double cropping is done in 15 to 30 % of nett sown area. These are Santar, Hardauli, Badagaon, Parsauli, Sanda Sani, Chhilolar and Bisanda rural nyaya panchayats. These nyaya panchayats also represent sound potentiality for multi cropping if they are provided with irrigational technology and other infrastructural facilities.

(iii) Third Category :

It includes the nyaya panchayat of Singhpur which has 31.31% of double cropped area. This demands more irrigation and other facilities.

(iv) Fourth Category :

It includes such nyaya panchayats where the double cropped area ranges between 45 to 60 % of nett cropped area. These are Chandra-

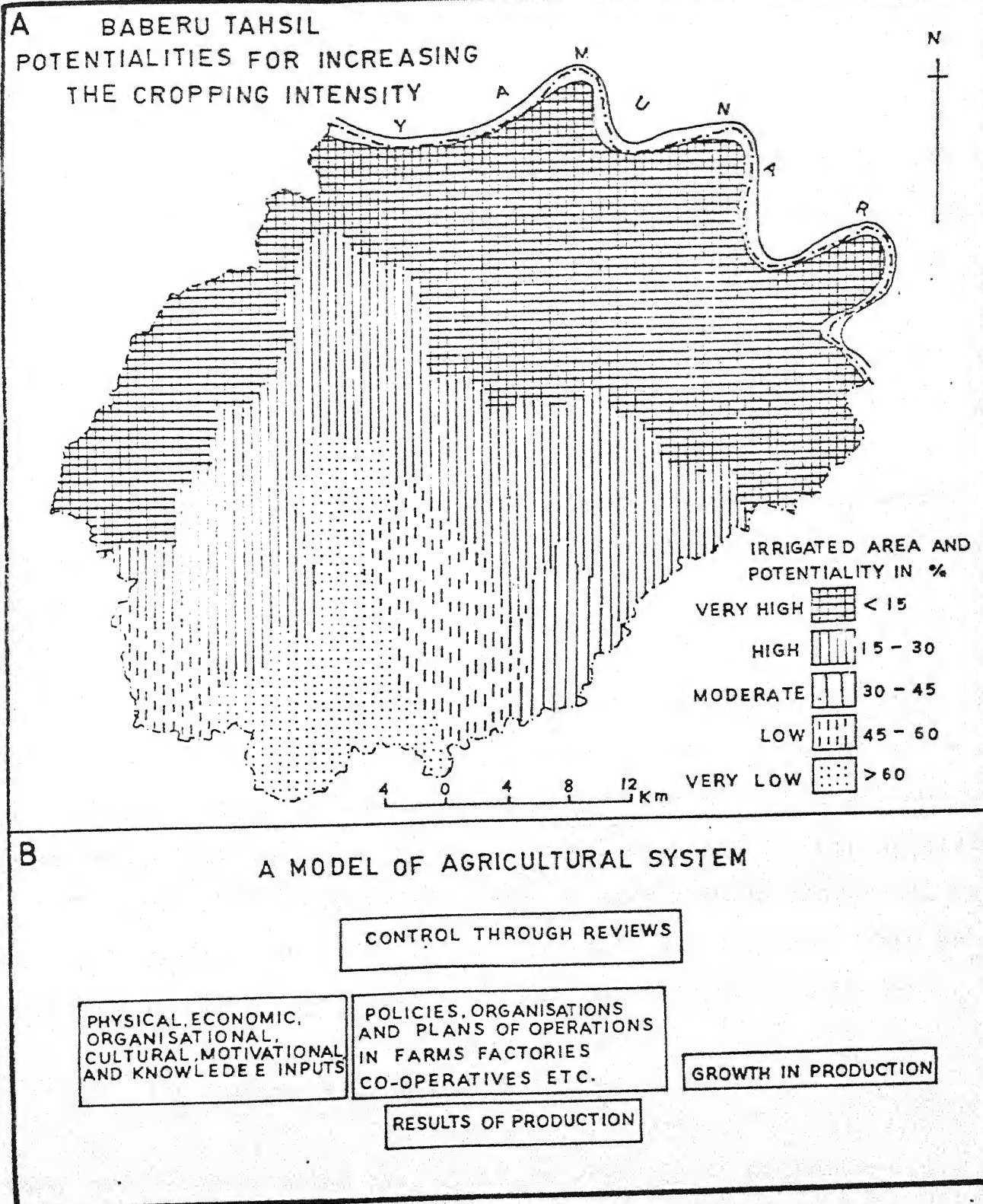


FIG. 6.1

yal, Pawaiya and Oran rural nyaya panchayats. These require better technical mechanical and other infra structural facilities.

(v) Fifth Category :

This includes the nyaya panchayats of Chausad, Kurrahi and Bhadehdu where the area under double cropping is more than 60 % of nett sown area. By providing better irrigation, fertilizers and technical expertise these nyaya panchayats can be brought under total double cropping.

The above analysis makes it clear that the provision of irrigational facilities plays a vital role in achieving the goals of multiple cropping in the study area. The training of modern farming, knowledge of scientific innovations and provision of extension services to each village and family can generate awareness among the cultivators for multiple cropping.

(iii) Agricultural Infra- Structure :

To fulfil the ambition of the cultivators and to increase the agricultural area for horizontally and vertically will be possible only when the required farm infra-structure and after harvest requirements are fulfilled. To achieve this end our agricultural scientists and planners should provide all sorts of agricultural inputs and irrigational facilities. Extension and training services must also be provided. We can divide agricultural inputs into two categories.

(a) Variable inputs, and

(b) Parametric inputs.

Variable inputs include all such efforts which affect the farm production directly and vary from place to place according to their supply and demand. Means of irrigation, provision of fertilizers, high yielding variety seeds, implements and credit facilities are some of the important variable inputs. The parametric inputs are of

fixed nature which make a general frame work for agricultural operations in which variable inputs operate that is security of tenure, innovation and diffusion of relevant knowledge through various extension and training centres. For these parametric inputs farmers do not invest directly (See fig. 6.1 B).

Provision of irrigational facilities :

Chapter two deals with the means of irrigation and irrigated area in the study area. The growing use of high yielding variety seeds and chemical fertilizers has become a basic requirement for the luxurious yield of crops which ultimately depend upon the proper and efficient arrangement of irrigational facilities.

From the analysis of the production of different crops, it has been observed that the nyaya panchayats of definite irrigational facilities give a bumper yield of paddy crop. The Bisanda block and Southern part of Baberu block are endowed with the irrigation facilities from the Baberu branch of Ken canal. This is the area where definite double cropping is in practice. Therefore, irrigation is the most required input for multiple cropping in the study area.

About 30.12 % of the nett sown area gets irrigational facilities where as 69.88 % of the nett sown area is still in the need of these inputs. The southern part of the study area i.e. Bhadehdu, Chandrayal, Chausad, Kurrahi, Pawaiya, Oran rural and Chhilolar nyaya panchayats are endowed with the facilities of canal as well as tube well irrigation where as the northern part of the study area i.e. Nibhaur, Paras, Bagehta, Palhari, Audaha, Bira and Sunahuli nyaya panchayats suffer from the absence of proper irrigational facilities. The irrigated area in these nyaya panchayats is below 10 % of the sown area. These nyaya panchayats represent good edaphic condition. If they are provided irrigation by pump canals they can give high

out put. The indulating surface and low water table are the hindrances in the development of proper irrigational facilities in these parts of the study area. Marka, Bira and Jorawarpur can be the best sites for pumping stations to pump water from the Yamuna river and provide irrigational inputs to the needy areas. The following table gives an estimation of benefitted areas by the suggested pump canals and their tributaries :

Table 2
Suggested Irrigation Projects

Name of project	Benefitted nyaya panchayats and villages		Nett sown area (in Hec.)	Present irrigated area (in Hec.)	Projected irrigated area (In Hec.)
	nyaya panchayats	villages			
1	2	3	4	5	6
1. Marka pump canal	1. Karhuli Muafi	1. Marka	8646	2597	3162
		2. Sanda			
		3. Kalana			
		4. Armar			
		5. Adhaon			
	2. Bhabhua	6. Bhabhua	3896	879	988
		2. Pindaran			
	3. Paras	1. Majhila	3318	148	175
		2. Gujaini			
	4. Hardauli	1. Tharthua	6431	2911	3316
		2. Patwan			
		3. Baberu Rural			
		4. Hardauli			
	5. Bagehta	1. Tola Kalan	5172	99	132
		2. Alampur			
		3. Dewartha			
		4. Bagehta			
	6. Palhari	1. Murwal	6839	705	917
		2. Palhari			
	Total		34302	7339	8690
2. Bira pump canal	1. Bira	1. Kheda	3219	32	65
		2. Bira			
		3. Amedhi			
		4. Raghavpur			
	2. Audaha	1. Ingua	7980	128	172
		2. Mau			
	3. Sunahuli	1. Budhauri	3253	198	205
		2. Sunahuli			

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1	2	3	4	5	6
		3. Sunahula			
		4. Satniaon			
	4. Santar	1. Umrahni	3337	619	813
		2. Santar			
		3. Kuchendu			
	5. Bhadehdu	1. Phuphundi	3688	2640	3115
		2. Korram			
	6. Badagaon	1. Nelathu	4919	963	1168
		2. Melathu			
Total			26296	4580	5538
1. Jorawarpur pump canal	1. Narainpur	1. Jorawarpur	4560	689	796
		2. Achharil			
		3. Narainpur			
		4. Khamarkha			
		5. Amlokhari			
	2. Kamasin	1. Pachhauhan	7876	1651	1904
		2. Kamasin			
		3. Kumedha Sani			
	3. Sanda Sani	1. Sanda Sani	5281	1409	1710
		2. Bamhraula Sani			
		3. Tera Darsenda			
	4. Chhilolar	1. Chhilolar	3959	1782	1915
	5. Parseuli	1. Jamu	5343	1967	2011
	6. Pawaiya	1. Amlohra	3885	2117	2315
		2. Bisendi			
Total			30904	9615	10651
Total			91502	21534	24879

Extension and training services :

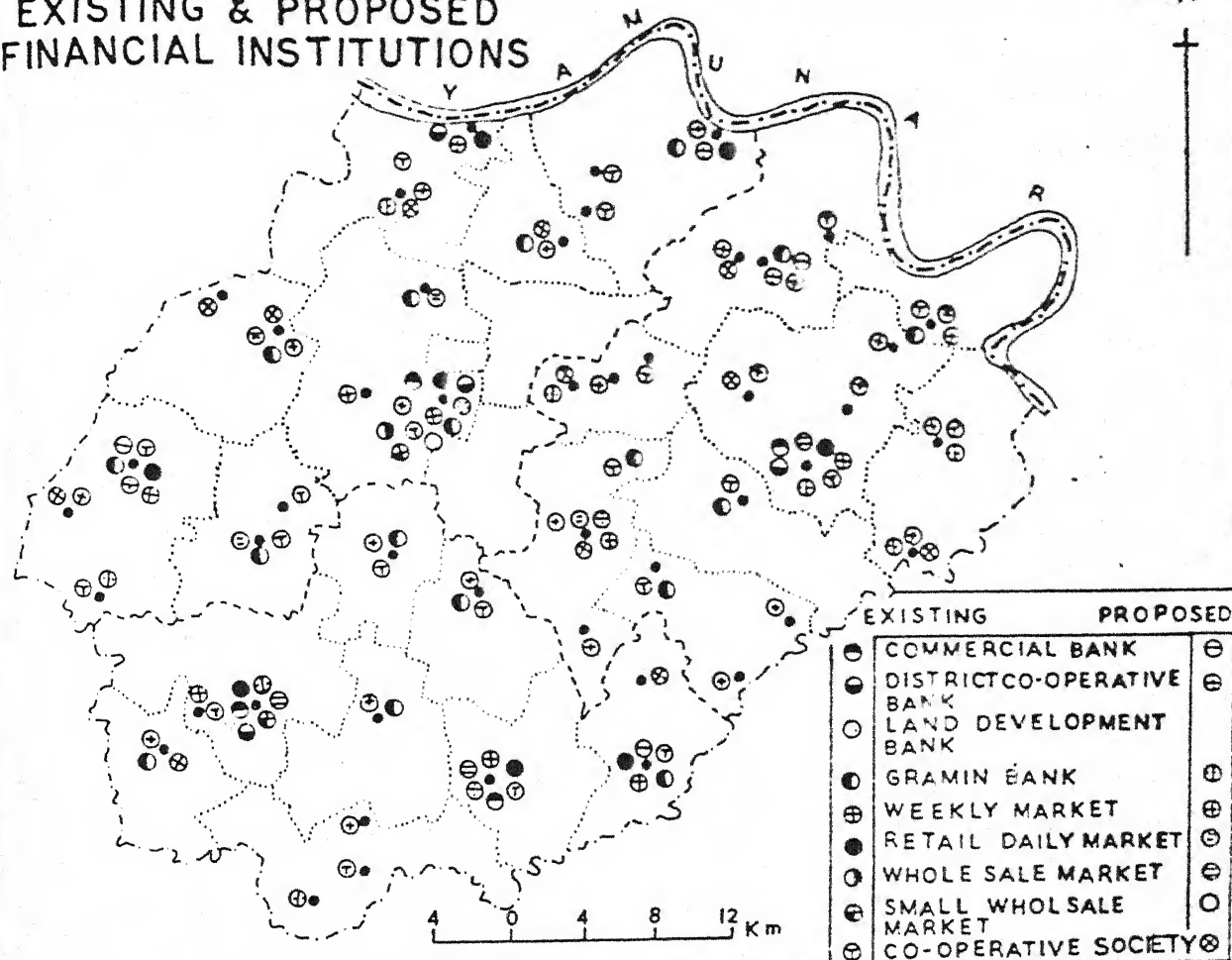
It is often said that farmers are reluctant to embrace innovations that would change their life and work². Many explanations are given for both, the lack of dynamism and the apathetic attitude ranging from value system of hindu religion to the effect of Monsoon³. But the fact often ignored is that promising technological innovations call for an intensive programme of training and education through an efficient extension system and unfortunately, that is very weak in the country as a whole. The degree to which a society or its constituent unit can go under transformation is determined by the accuracy, the speed and the effectiveness with which the ideas and innovations diffuse from person to person and from place to place⁴. As suggested by the planning commission⁵, It will be necessary to strengthen the mechanism for effective transfer of technology from research centres to the farmers' fields.

For this purpose, basic training of extension personnel in production-cum-extension technology is necessary⁶. Only trained and dedicated agents can diffuse innovation among farmers. It will require field demonstrations, basic education through Mass-Media, Literature and audio-visual aids and formal training of farmers. Optimal locations to provide such infra structure in the tahsil are given in fig. 6.2 A & 6.2 B.

6.2 VARIOUS CATEGORIES OF INDUSTRIES :

The complementarity of resources dealt in chapter two shows that the various resources pertaining to the agriculture, live stock, forestry etc. provide local basis for the development of industrial sector. The agricultural resources have played their vital role in the development of various agri based industries mainly the rice milling industry for which the raw material is available in profuse quan-

EXISTING & PROPOSED FINANCIAL INSTITUTIONS



EXISTING & PROPOSED EXTENSION SERVICES

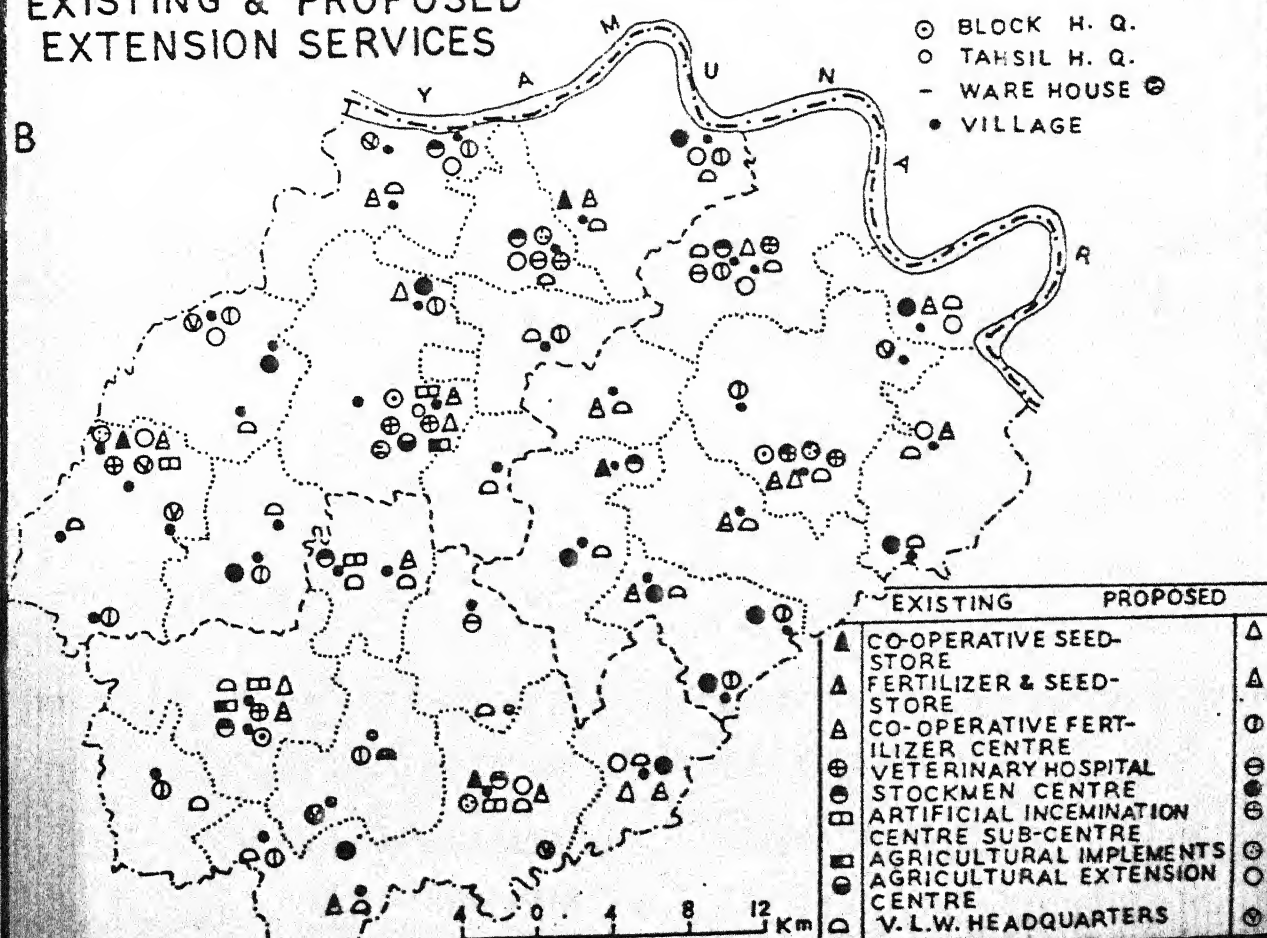


FIG. 6.2

and the
tity in live stock, forest and mineral resources have also aided in the development of industrial scenery.

When we analyse the present industrial structure of the area we find that various industry groups have emerged. in the study area. The group wise description of the industry has been given in the following table :

Table 3
Number of Industrial Units in Various Industry Groups in
Tahsil Baberu, 1984-85.

Sl. No.	Industry groups	Number of units	Percent of Industry groups
1	2	3	4
1.	Agro based	101	26.57
2.	Mineral based	110	28.95
3.	Forest based	81	21.32
4.	Live stock based	49	12.59
5.	Engineering based	21	5.53
6.	Chemical based	9	2.37
7.	Other	9	2.37
Total		390	100.00

Source : District Industrial Centre, Banda, 1984-85.

Apart from the above listed industries, there are various co-operative societies working in the form of black smiths, Poultry breeder, leather tanners, weavers oil expellers, ^{guilds} etc. besides the registered industries, various cottage level industries can be maked all over the tahsil. However these co-operative societies and various other industrial units are not properly organised.

6.3 PRESENT INDUSTRIAL SCENE :

(A) Agro based industries :-

Agriculture has been the main stay of the tahsil, paddy,

wheat, gram, pulses, oil seeds, sugarcane and various other crops provide sufficient raw materials for the agro based industries. There are 101 units of agro based industries in tahsil Baberu, registered by the district industrial centre Banda. Out of which 21 are in urban centres and remaining 79 rural area (See Fig. 6.3 A & Appendix 6.1). The regression relationship between the industrial units and workers exhibit a positive tendency ($y = 6.32 + 0.23 X$ & $r = 0.72$) Fig. no. 6.3 B.

The following table shows the number of agro based industrial units and their employment at the nyaya panchayat level (1984-85).

Table 4
Agro Based Industrial Units and their Employment in Tahsil Baberu, 1984-85.

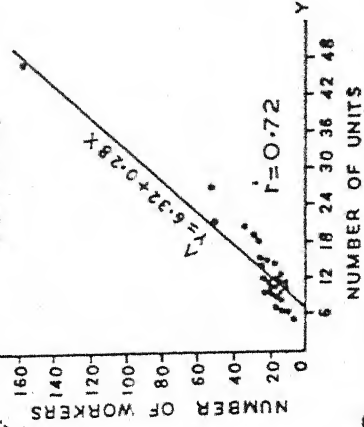
Sl. No.	Nyaya Panchayats/ Town area	No. of agro-based industrial units	Employment (persons)
1	2	3	4
1.	Nibhaur	3	7
2.	Bhabhua	6	8
3.	Karhuli Muafi	5	8
4.	Paras	5	7
5.	Santar	3	6
6.	Hardauli	5	9
7.	Bagehta	2	6
8.	Palhari	3	8
9.	Badagaon	4	10
Block Baberu		36	69
10.	Audaha	2	5
11.	Bira	3	4
12.	Narainpur	1	2

BABERU TAHSIL CATEGORIES OF INDUSTRIES

- AGRO BASED
- MINERAL BASED
- FOREST BASED
- LIVE STOCK BASED
- ENGINEERING BASED
- CHEMICAL BASED
- OTHERS

N

INDUSTRIAL UNITS AND
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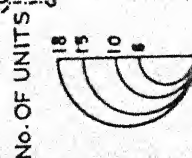


FIG. 6.3

1	2	3	4
13. Kamasin		6	21
14. Sunahuli		2	6
15. Parsauli		2	4
16. Sanda Sani		3	5
17. Chhilolar		1	2
Block Kamasin		20	49
18. Bhadehdu		2	5
19. Bisanda Rural		5	12
20. Chandrayal		3	9
21. Chausad		2	6
22. Kurrahi		3	8
23. Pawaiya		2	3
24. Oran Rural		4	5
25. Singhpur		3	9
Block Bisanda		24	57
26. Baberu T.A.		10	45
27. Bisanda T.A.		6	20
28. Oran T.A.		5	10
Total Tahsil Baberu		101	250

Source : District Industry Centre, Banda.

From the above table it is evident that the town area have greater concentration of agrobased industries in comparison to the rural area. The main industries functioning in the area are rice mills, flour mills, dal mills edible oil and gur and khandsari work.

Rice Mills :

The area is rich in paddy production therefore the rice dehushing activities have assumed the form of an important industry in tahsil Baberu. Paddy is dehushed in raw as well as boiled conditions. The finished product of raw and boiled paddy are known as Arva or un-cooked rice and Bhujiya are the cooked rice respectively. It can also be categorised as polished and unpolished. About two third weight of the paddy is retained in the form of rice and the rest one third is left as husk. It means that paddy is a 'gross raw material' and rice is a 'pure raw material'. This is during is a raw material binding industry. This is the region where paddy producing areas are studded with a number of rice mills. A considerable quantity of rice dehushing is also done by the indigenous method in the villages of the area by the house wives or by the labourers.

There are five medium size rice mills in the area, the total production of which is about 4400 tonnes per annum. In 1982-83 the total production of rice in tahsil Baberu was 4455 metric tonnes, which is only 36.99 % of total paddy production in the tahsil.

The modern rice mills in this tahsil are not very old. Their genesis could be traced in the mid 20th century. At present five medium size rice mills are working at Baberu (3), Bisanda (2) and Kamasin (1). The main rice mills of Baberu are Shankar Rice Mills of Baberu are Shankar Rice Mills Baberu, Nandan Rice Mills Baberu Jagdish Rice Mills Baberu and Shankar Modern Rice Mills Bisanda. Sadhu Mini Rice Mill is located at Kamasin. A considerable quantity of rice dehushing is also done by the indigenous methods in the villages of the paddy producing areas of this tahsil. The total capacity of the five rice mills of area is about 4455 metric tonnes. The following table shows the distribution of Rice Mills and employment in Banda district.

Table 5
Distribution of Rice Mills and Employment in Banda District, 1994-95.

Sl. No.	Tahsil	No. of rice mills	Employment persons
1	2	3	4
1.	Banda	16	300
2.	Naraini	33	635
3.	Baberu	6	100
4.	Karwi	2	20
5.	Mau	Nil	Nil
Total		57	1055

Source : District Industry Centre, Banda.

The employment in rice mills is the greatest in the west Bengal. The above table shows the tahsil wise distribution of employed persons in rice mills. Tahsil Baberu stands at third place in the district with an employment of 9.52 % of total workers in the district. The nature of rice milling industry is seasonal. Its busy season extends from October to March and so that the number of labourers fluctuate from 10 to 15 per unit per day and in the off season this number decreases to five person or less than this.

The labourers are mostly local people and technicians belong to other places outside the tahsil. The wage structure and service conditions of labourers engaged in this industry reveals its bad position. The labourers are mostly under paid as they are appointed in the pay scale of rupees 120.00 to 200.00 per month in case of unskilled labourers and rupees 250.00 to 400.00 per month in case of clerks and skilled workers. They have no service rules or job security. The following table shows the structure of productive capital in this industry during 1973.

Table 6
Structure of productive Capital in the Rice Milling Industry of
U.P. - 1975.

Items	Percentage of productive capital
Land	6.3
Building	23.2
Plant and machinery	27.3
Other fixed assets	0.9
Total fixed capital	57.7
Stocks of raw materials	14.2
Stocks of finished products	19.4
Semi finished products	0.4
Cash in hand and at the banks	9.3
Total, working capital	42.3
Total, productive capital	100.0

Source : Extracted from A.S.I., India, 1975.

The above table shows that plant and machinery share the largest part of the productive capital in comparison to other items. Next to this come the share of building, stocks of finished products and raw materials.

Dal milling industries :

Dal is an essential items of Indian Vegetarian food and it is obtained from the grains of Arhar, Mung, Urd, Masur, Gram, Pea and other crops. There is only 1 'Dal' mill in tahsil Baberu located at Baberu. Jagdish Dal and Rice Mill Baberu gives the employment to 8 persons. Dal Milling industry is not well popular in tahsil because the paddy and wheat crops are dominant where as the crops under pulses have a little area other reason of the unpopularity of this industry is that mostly the pulses are processed by indigenious method mostly

the house wives hull and process the pulses in the area.

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Oil milling industries :

The history of oil milling industry is very old in tahsil Baberu. From ancient times oilmen have been using wooden oil expellers driven by bullocks. But after 1950 with the emergence of power driven expellers, the old method became very insignificant. The oil milling industry is mostly done as a house hold industry employing the family members. There are 11 oil expellers working in tahsil Baberu. They are located at Baberu, Oran, Karhuli Muafi, Bisanda, Kamasin, Kurrahi, Hardauli, Marks, Simauni, Amlohra and Bagha these units employ nearly 36 persons. The main raw materials used in this industry are oil seeds such as til (sesamum), mustard, linseed, rape seed and groundnut. Except groundnut, all other oil seeds are locally produced and supplied to the oil expellers. The oil seeds are gross raw materials as they lose 42 % of their weight in the process of oil extraction. They are mostly located at big centres or towns because such centres consume a greater quantity of oil.

The total capacity of these oil expellers is 1963 tonnes per annum. The main problems of their oil expellers are the shortage of power, finance and raw materials.

The flour milling industries :

The flour milling industry may be traced back to the long past. The system of grinding flour by grinding stones by the house wives is a traditional and old fashion. It is still in practice in remote village but in towns the grinding of grains is done by the power driven flour mills. In urban centres service men, business men and wage earners do not spare time to grind flour in their houses. The house wives of the urban centre are mainly engaged in arts, crafts and services so they have no inclination in house hold works in their

houses. If they get of time they pursue higher cultural and social activities. Thus, there exists the great incentives for flour milling industry in urban centres. The flour milling industry uses the pure raw material therefore the location of flour milling industry is mainly consumption bound.

There are 79 mini size flour mills scattered all over the tahsil Baberu. They provide employ^{-ment} to about 157 persons. The maida, flour and suzi are the main products of this industry. The small flour mills provide fresh flour to the bread eaters of tahsil Baberu.

Besides, above quoted main industries there are various house hold units of gur and khandsari making units and vegetable and fruit processing is done in tahsil Baberu. From the above description it is evident that tahsil Baberu is very backward as far as its industrial development is concerned. This backwardness is mainly due to the unawareness among the agriculture bound people and ^{lack of} infrastructure and interpreneurial ability.

(B) The forest based industries :

The forest based industries are as old as agriculture. Free Man has rightly stated "for much of human history woods have been used both as fuel for constructional purposes more and more although retaining its use for building, furniture and allied uses, it has become a raw material for many derived industries."

The total number of forest based industry is 81 in this tahsil out of which 21 units are located in the towns and the rest 60 in rural centres. Among the 25 nyaya panchayats Bhabhua ^{has} greatest number of forest based industry showing 5 units. The nyaya panchayats is followed by Karhuli Masfi, Bagehta and Audaha. Tahsil Baberu is dominantly an agricultural area therefore forest based industry is done all over its villages.

The following table shows the nyaya panchayat wise distri-

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bution of forest based industry in tahsil Baberu.

Table 7
Statement of Forestbased Industries in Tahsil Baberu, 1984-85.

Sl. No	Nyaya Panchayats/ Town area	Number or units	Capital investment in lakh rupees	Employment (persons)
1	2	3	4	5
1.	Nibhaur	3	0.36	4
2.	Bhabhua	5	0.53	5
3.	Karhuli Muafi	4	0.42	5
4.	Paras	3	0.30	6
5.	Santar	2	0.20	4
6.	Hardauli	3	0.36	6
7.	Bagehta	4	0.30	4
8.	Palhari	2	0.20	3
9.	Badagaon	2	0.20	3
Block Baberu		29	2.97	40
10.	Audaha	4	0.36	8
11.	Bira	1	0.10	1
12.	Narainpur	2	0.20	3
13.	Kamasin	3	0.40	7
14.	Sunahuli	2	0.20	5
15.	Parsauli	2	0.20	5
16.	Sanda Sahi	3	0.25	5
17.	Chhilolar	2	0.15	4
Block Kamasin		19	1.96	38
18.	Bhadehdu	1	0.10	1
19.	Bisanda Rural	2	0.15	4
20.	Chandrayal	-	-	-
21.	Chausad	3	0.25	3
22.	Kurrahi	1	0.15	1
23.	Pawaiya	2	0.15	2
24.	Oral Rural	2	0.20	3
25.	Singhpur	2	0.20	3
Block Bisanda		13	1.20	18

1	2	3	4	5
26. Baberu T.A.		12	0.68	40
27. Bisanda T.A.		6	0.36	8
28. Oran T.A.		3	0.25	4
Total Tahsil Baberu		21	7.22	148

Source : District Industry Centre, Banda.

The above table makes it clear that the total investment in forest based industry is lakh rupees 7.22 and total employment is for 148 persons. The forestbased industries of the area are very small in size mostly located in the house of traditional wood workers and carpenters. As tahsil Baberu has a very little forest area therefore the units of forest based industry have to manage the wood from outside the tahsil.

The main industry based and forest products as their raw material are as under :-

- (i) Wooden furniture and raw milling industry
- (ii) Carpentry and cabinet making industry
- (iii) Agricultural implement industry and wooden house hold manufacturing industry.

The above industries are very small in size and mostly manufacture the items of local demands such as bullock cart, wheels, ploughs and other agricultural implements and building equipments etc. The main problems before the forest- based industry is the in sufficient supply and proper quality of timber.

(C) Mineral based industries :

Tahsil Baberu is greatly lacking in mineral deposits therefore, mineral based industries are almost absent only house

hold units using earth and stones imported from out side the region are the main raw materials for this group of industries. Pottery and brick kiln are the main mineral based industries of the tahsil. Pottery is a traditional art almost being performed all over the area. The number of unregistered mini household industries and their workers have been given in the following table.

Table 3

Statement of Mineral Based Industry in Tahsil Baberu, 1994-95.

Sl. No.	Nyaya Panchayats/ Town Area	No. of units	Persons employed
1	2	3	4
1.	Nibhaur	3	5
2.	Bhabhua	4	7
3.	Karhuli Muafi	5	6
4.	Paras	3	8
5.	Santar	5	5
6.	Hardauli	4	6
7.	Bagehta	6	6
8.	Palhari	4	5
9.	Badagaon	2	4
Block Baberu		36	52
10.	Audaha	3	4
10.	Bira	5	5
12.	Narainpur	2	2
13.	Kamasin	4	10
14.	Sunahuli	3	4
15.	Parsauli	4	7
16.	Sanda Sani	2	4
17.	Chhilelar	2	2
Block Kamasin		25	38
18.	Bhadehdu	3	4
19.	Bisanda Rural	6	5
20.	Chandrayal	4	6
21.	Chausad	3	5
22.	Kurrahi	3	3

1	2	3	4
23.Pawaiya		5	9
24.Oran Rural		3	3
25.Singhpur		5	11
Block Bisanda		32	46
26.Baberu T.A.		8	32
27.Bisanda T.A.		5	10
29.Oran T.A.		4	8
Total tahsil Baberu		110	196

Source : District Industry Centre, Banda.

(D) Engineering Industries :

Engineering industries are of two types electrical and mechanical, which are concentrated in the town of tahsil Baberu. They are mostly demand based in nature and concerned with job work assembling and repairing of radios and transistors, watches, electric machinery, battery charging, insulated wires etc. In tahsil Baberu the total number of such industries is 21 which are located at the centres of Baberu, Kamasin, Bisanda and Oran etc. The following table represents the distribution of these industries in tahsil Baberu.

Table 9
The Statement of Engineering Industries in Tahsil Baberu, 1994-95.

S1/ No.	Nyaya Panchayats/ Town area	No. of units	Persons employed
1	2	3	4
1.	Bhabhua	1	2
2.	Paras	1	1
3.	Bagehta	1	2
4.	Palhari	3	5
5.	Badagaon	1	1
6.	Kamasin	1	2
7.	Bisanda Rural	2	2

1	2	3	4
8. Oran Rural		1	1
9. Baberu T.A.		6	3
10. Bisanda T.A.		2	3
11. Oran T.A.		2	2
Total Tahsil Baberu		21	29

Source : District Industry Centre, Banda.

The above table shows that the main units of engineering industry are concerned with the cycle repairing, job work, electrical works, agricultural implements making and repairing and various other mechanical activities are being performed. According to the requirement of the people with the urbanization of the study area the units of this group may increase their number upto a great extent.

(E) Chemical based industries :

The chemical industries are a big family of industries that have one characteristic in common namely the fact that chemistry plays an important role in the process. On the basis of the degree of chemical processing involved, the chemical industry may be divided into three categories :

(i) Pure chemical industry :

This group includes the production of heavy chemicals like Soda ash and sulphuric acid, fine chemical like drugs and pharmaceuticals and electro-chemicals and others.

(ii) Allied chemical industries :

They include the manufacturing of paints, colours, cosmetics etc. These are blended with other materials.

(iii) Chemical process industries :

They include paper, rubber, glass etc. The chemical industry is the basic industry in the development of various other

industries depending upon the chemical industries. The production of paints and colours, varnishes, glass, plastics, oils, soaps, acids and alkhalies is possible when chemicals are available in profuse quantity. In tahsil Baberu the total number of chemical industries is 6 out of which 3 units are located at Baberu town area and the rest 3 are located at Bisanda town area (2) and Kamasin (1). The details of chemical industry have been given below in the table 10.

Table 10
Details of Capacity, Production, Fixed Assets and Employments of
Chemicals Industry in Tahsil Baberu, 1984-85.

Sl. No.	Name of units and full address	Productive capacity	Value (in lakh Rs.)	Actual production (in lakh Rs.)	Fixed assets (in lakh Rs.)	Employment (persons)	Items produced
1	2	3	4	5	6	7	8
1.	M/s Chaurasia Ice Factory, Baberu	36,00,000	3.12	0.14	0.12	3	Ice Candy
2.	M/s Raju Ice Candy, Baberu.	30,00,000	0.15	0.15	0.20	5	Ice Candy
3.	M/s Sharda Ice Candy, Oran Road, Bisanda.	18,00,000	0.60	0.20	0.27	5	Ice Candy
4.	M/s Suresh Ice Candy, Bisanda.	30,00,000	0.15	0.10	0.30	3	Ice Candy
5.	M/s Ram Ice Candy, Kamasin.	3,00,000	0.15	0.14	0.25	4	Ice Candy
6.	M/s New Ajuha Product, Baberu	-	0.12	-	0.01	2	Manjan
Total		90,00,000	4.29	0.73	1.15	22	

Source : District Industry Centre, Banda.

From the above table it becomes evident that chemical industries are under developed in tahsil Baberu. The main reason of this unsatisfactory development is the rural masses of the area which do not require the product of chemical industries in sufficient amount.

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Only ice candy making and tooth powder making and ointment making are the only industries of this group develop in the study area so far.

(F) Live stock based industries :

Tahsil Baberu is rich in live stock and their products such as hides and skins, milk, bone, wool, bristles, eggs etc. These materials provide strong base for leather tanning and foot wear industries and also for dairy, bone power making, blanket weaving and brush making etc.

There are 49 centres where leather tanning is done on household level. These centres collect the hides and skins and tann-then in the house. After that they utilize them in indigenous shoe making. The details of leather tanning industry have been given in the following table.

Table 11
The Statement of Leather Tanning in Tahsil Baberu, 1994-95.

Sl. No.	Centres	Nyaya Panchayats/ Town Area	No. of units	Persons employed	Production (in nos.)
1	2	3	4	5	6
1.	Nibheaur	Nibheaur	2	4	240
2.	Bhabhua	Bhabhua	2	3	250
3.	Pindaran	-	-	-	-
4.	Karhuli Muafi	Karhuli Muafi	1	2	190
5.	Paras	Paras	2	2	290
6.	Poon	-	-	-	-
7.	Bagehta	Bagehta	1	1	120
8.	Murwal	Palhari	3	3	295
9.	Aliha	-	-	-	-
10.	Badagaon	Badagaon	3	3	210
11.	Shive	-	-	-	-
12.	Ahar	-	-	-	-
Total Block Baberu			14	19	1565

1	2	3	4	5	6
13.	Audaha	Audaha	1	1	122
14.	Bira	Bira	1	1	115
15.	Kamasin	Kamasin	4	8	765
16.	Pachhauhan	-	-	-	-
17.	Sunahuli	Sunahuli	2	2	208
18.	Satnison	-	-	-	-
19.	Parsauli	Parsauli	2	3	39
20.	Birraon	-	-	-	-
21.	Sanda Sani	Sanda Sani	2	2	218
22.	Tilause	-	-	-	-
23.	Chhilolar	Chhilolar	1	2	115
Total Block Kamasin			13	19	1844
24.	Bisanda Rural	Bisanda Rural	2	3	290
25.	Gheori	-	-	-	-
26.	Bhadehdu	Bhadehdu	1	2	225
27.	Chausad	Chausad	2	2	165
28.	Tendura	-	-	-	-
29.	Kurrahi	Kurrahi	1	1	110
30.	Pawaiya	Pawaiya	2	3	295
31.	Majhiwan Sani	Oran	2	2	315
32.	Shahpur Sani	Rural	-	-	-
Total Block Bisanda			10	13	1390
33.	Baberu T.A.	Baberu T.A.	5	15	1424
34.	Bisanda T.A.	Bisanda T.A.	4	6	618
35.	Oran T.A.	Oran T.A.	3	4	310
Total Tahsil Baberu			49	76	7151

Source : District Industry Centre, Banda.

Shoe and Chappal making is the main live stock based industry in tahsil Baberu. These are manufactured almost by the chamars (shoe makers) almost in every village. Because their finishing is not attractive, therefore, they are mostly sold on cheapest rates. The

modern type of shoe making units are mostly concentrated in urban centres. Besides these two industries based on live stock raw materials their can be developed a few more units of bone crushing, brush making, paneer, butter, khoysa and ghee making units. The hair of sheep and goat are sold in the markets outside the area. Because the technical skills for woollen yarn making is lacking in tahsil Baberu. If technical skill provided the local wool and hair can be utilized and local need for the warm cloths can be fulfilled.

(G) Other industries :

Other industries besides above quoted groups of industries are very little. There are 9 other industries working in tahsil Baberu. There are two printing and publishing industry both located at Baberu town area.

The following table shows certain details of printing, publishing and other industries in tahsil Baberu.

Table 12

Statement of Other Industry Capacity and Their Employment in Tahsil Baberu, 1984-85.

Sl. No.	Locations	Capacity in lakh Rs.	Units	Employment (Persons)
1	2	3	4	5
1.	Baberu T.A.	0.9	3	6
2.	Bisanda T.A.	0.5	2	3
3.	Oran T.A.	0.3	2	3
4.	Kamasin	0.4	2	2
Total		2.1	9	14

Source : Personal Survey in tahsil Baberu.

6.4 FUTURE PLAN :

It is a well accepted dictum that better employment opportunity rests largely in the non-agricultural sector. From the pre-

vious analysis of different categories of industry developed in the study area. It is evident that the industries are mostly of small scale size and are in a less developed stage: only 0.20 % of the total population is engaged in industrial activities as against 0.36 % in agriculture sector. This shows that the area under study is in the stage of backward economic development. The growing population can not be supported only by the land resources. Sometime back, the estimates committee of the Lok Sabha has emphasised "Neither agriculture nor large-scale industry nor even both of them together can absorb the growing number of un-employed and under-employed in villages ; a well thought out and comprehensive programme of decentralised industry in rural areas implemented with drive, sincerity and sense of paramount urgency can provide an effective answer to the vast problems of rural unemployed⁶". Keeping the above statement in view the industrial development in rural conditions must take the following three forms :

- (i) Industries must be decentralised in rural areas.
- (ii) Cottage and small-scale industry ; must be given priority in rural conditions and
- (iii) Traditional skills alive in rural areas must be upgraded to cope with rural demand.

The industrial resolution 1977 also emphasises the development of small and cottage industries alongwith the inter action between agriculture and industrial sector. It is further emphasised that in the present situation what is required is not mass production but production by masses so that the very production process may become the means for equitable distribution of wealth.

In our conditions the Chinese experience of 'walking on two legs', i.e., simultaneous development of big medium and small

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scale industries and emphasis on agricultural development in more⁷. As there is a clear and important role of large scale industry, they should be encouragedⁱⁿ rural areas by relating ~~by~~ them^{to} development programmes and basic needs of the peoples in rural sector. The areas of large scale industries will be as follows :-

- (i) Those basic industries which provide infra-structure and development of small and village industries like steel, non-ferrous, metals, cement, oil refineries, etc.
- (ii) Industries related with the capital goods which fulfil the machinery requirements of large as well as small industries.
- (iii) Industries based on high technology which are related to agriculture and small scale agricultural industry such as fertilizers, insecticides, pesticides ~~in scientific~~ herbicides, petro-chemicals, etc. should be developed.

As for as the problems of unemployment is concerned the village and small industries play their significant role in providing employment opportunity in the rural areas. The doctrine of just distribution of income can be hoped by the wide dispersal of small^{and} cottage industryⁱⁿ rural areas. These industries must be located in rural areas according to the rural needs. They should also provide employment to local rural people. At present, the District Industry Centre is working for the promotion of small and village industry. For this purpose it provides loans to the educated unemployed. But the benefit has been experienced mostly by the urban a few. For the expansion of industry in rural areas atleast a sub industry centre must be established at each block head quarter, So that the policies and programmes of industrial development and credit may reach to the common people in our country side areas.

In the study area many agricultural products are in surplus quantity which invite more industrial plants based on them.

New Industries- Locations and Employment :

It would be, here, useful to discuss the potentials of some new and important industries in the cottage and small scale sector in rural areas based on the local raw materials and local employment. Mahatma Gandhi also advocated the popularization of cottage and small industries which has now caught the imagination of our planners. It has been recognised that the labour oriented industries can mitigate unemployment in rural sector since the First Five Year Plan envisages various specific measures which have been taken for the development of village industry. Following the recommendations of the planning commission, the Indian government set up an All India Khadi and Village Industry Board^{in 1953}⁸. The objectives behind the organisation of this board were as follows :-

- (i) to provide large scale employment to the rural masses ;
- (ii) to manage, adjust and make an equitable distribution of national income ;
- (iii) to mobilise resources and skills effectively to extend the training facilities to the artisans ;
- (iv) to manage the supply of raw materials and equipments ; and
- (v) to make study of the problems of various village industries.

The industries which can be developed in the rural conditions can be categorised into four heads :-

- (i) Art and crafts, processing of agricultural products, bee keeping, etc.
- (ii) Subsistence industry such as black smithy, carpentry, etc.
- (iii) High standard art industries such as handicrafts, silk, brassware, etc.
- (iv) Subsidiary cottage industry such as sericulture, coir making,

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cane works, etc.

Potentials for future industrial development :

The previous analysis of the existing industrial structure in the tahsil reveals that the share of industrial sector in the economy of the region is quite negligible. It is not due to the lack of raw materials. In essence, it is the lack of industrial incentives. Such as financial assistance, cheap land, assistance to entrepreneurial management which are the main factors in the process of village industrialisation as mentioned above. The four categories of industries which can be developed in rural conditions can further be group into two heads :

- (i) The industries using agricultural forest, animal and fisheries products; and
- (ii) The industries which serve agriculture by providing implements and fulfil various other requirements for agricultural development.

Industries using agricultural, forest, animal and fisheries products:

The study area is very much poor in mineral and forest resources, therefore, the potentials of its rural industrialisation lie mainly in the agricultural sectors, paddy, wheat, sugar cane, gram, jowar, bajra and barley are the main crops which can support agro-industries based on them.

Keeping in mind the increasing demand of milk and milk products, ^{the dairy industry} has good prospects in the tahsil. But it would require proper processing, organisational and marketing systems.

Fishery has good prospects in the tahsil the bundhies, tanks, ponds and the Yamuna river can be utilized for fish culture.

The Industries serving agriculture :

The study area is ^{Pre-}dominantly ^{an} agricultural area, therefore,

the industries which serve agriculture and allied activities have ^a the very good scope. The manufacturing and repairing of farm implements repairing and servicing of automobiles, manufacturing of wooden and steel furniture and fixtures and light engineering works can make a notable contribution to the industrial development of the study area. These industries can also have many beneficial feed back effects on agricultural production.

If due attention is paid to the proper gearing up of the local resources and demand based industries; it can also help in ^{checking} the out flow of rural people and capital; providing subsidiary occupations for small farmers and create employment opportunity and accelerating the agriculture production⁹.

6.5 PROPOSAL FOR INDUSTRIALISATION :

Proposed Rice Mills :

The region is rich in agricultural produce like paddy, wheat, gram, barley jowar and sugarcane etc. These crops provide raw materials for various agro-based industries in the study area.

The study area provides bumper paddy production which further provide opportunity for the installation of new rice mills in the area. In 1982-83 the total production of paddy was 22,753 metric tonnes which is much above the hulling capacity of 6 rice mills presently working in the area. The total production of rice by all the 6 mills was 4400 tonnes in the same year. Paddy is a gross raw material which gives about 65 % of rice of its total weight. On this basis the total utilisation of paddy by the rice mills comes to be 6769 metric tonnes. Which is much below the total availability of paddy. The surplus quantity of paddy which is about 15989 metric tonnes remains unused by the rice mills. One rice mill on the average, utilise about 450 metric tonnes of paddy per annum. If calculated at this rate

we find that more than 30 rice mills can be established at suitable new locations. The pulls and pushes of locational factors must be considered while establishing new rice milling ^{units} ~~role in the location of a particular industry~~. They are the supply of raw material, availability of market, labour, power, capital and transport facilities, Managerial availability and political influence also play ^a dominant role in the location of industrial units. Considering all these locational factors the following locations have been suggested for new rice mills ^{during the} ~~last~~ phase of the century (See table 13).

Table 13
Proposed Locations of Rice Milling Industry in Tahsil Baberu

Sl. No.	Name of locations	Population in 1981	Name of nyaya panchayats/ T.A.	Available facilities	Banking facilities	No. of new units
1	2	3	4	5	6	7
1.	Baberu T.A.	9695	Baberu T.A.	Rm, T, P, L, C, M	Allahabad Bank, Co-operative Bank, Tulsi Gramin Bank.	2
2.	Hardauli	7497	Hardauli	Rm, L, T, P, M.	-	2
3.	Karhuli Muafi	1152	Karhuli Muafi	Rm, L, P, T, M.	-	1
4.	Palhari	2931	Palhari	Rm, L, P, M.	-	1
5.	Bhabhua	2481	Bhabhua	Rm, T, L, P, C, M.	Tulsi Gramin Bank	2
6.	Uarahani	2171	Santar	Rm, T, L, P, M.	n -	1
7.	Kamasin	4595	Kamasin	Rm, T, L, C, P, M.	Allahabad Bank, Co-operative Bank	2
8.	Sanda Sani	2689	Sanda Sani	Rm, L, P, M.	Tulsi Gramin Bank	1
9.	Birraon	2402	Parseuli	Rm, T, P, L, C, M.	Tulsi Gramin Bank	2
10.	Pawaiya	2620	Pawaiya	Rm, L, M.	-	1
11.	Oran T.A.	4147	Oran T.A.	Rm, T, P, L, C, M.	Allahabad Bank	2
12.	Siklodhi	1719	Chandrayal	Rm, L, C, M.	Tulsi Gramin Bank	1
13.	Punahur	4451	Chandrayal	Rm, L, T, P, M.	-	1
14.	Kurrahi	6465	Kurrahi	Rm, T, P, L, C, M.	Tulsi Gramin Bank	1
15.	Bagha	4233	Kurrahi	Rm, T, P, L, M.	-	1

1	2	3	4	5	6	7
16.	Bisanda T.A. 7193	Bisanda T.A.	Rm,T,P,L,C,M.	Allahabad Bank, 2 Co-operative Bank.		2
17.	Ballan 4367	Chausad	Rm,T,L,C,M.	Tulsi Gramin Bank		2
18.	Chausad 3520	Chausad	Rm,T,L,M,	-		2
19.	Sathi 1633	Bhadehdu	Rm,T,P,L,M.	-		1
20.	Bhadehdu 3263	Bhadehdu	Rm,L,T,P,C,M.	Tulsi Gramin Bank		2
Total		79129	-	-	-	30

Where : Rm = Raw Material,
T = Transport,
P = Power,
C = Capital,
L = Labour
M = Market.

Proposed medium size flour mills :

The total production of wheat in the Bisanda, Baberu and Kamasin blocks was 17433, 14423 and 10415 metric tonnes in 1982-83 which will go up by 23372, 17495 and 12726 metric tonnes in 2000. If the proposed cropping pattern is adopted and per hectare production is assumed to be 966.48 Kgs. the Bisanda block (49.17 %) will show the highest percentage of area under this crop. It shall be followed by Baberu block (35.50 %) and Kamasin block (30.48 %). The production of wheat during 1982-83 was 42,281.00 metric tonnes in the tahsil Baberu. The highest production was recorded by Bisanda block (41.24 %) and was followed by Baberu (34.12 %) and Kamasin (24.63 %) blocks respectively. During the field survey it was observed that a large proportion of wheat i.e. about 25 % of the total area is hand milled or milled in primitive flour mills. If it is presumed that 10 % of the total production will be reserved for seed and other purposes the rest

15 % still remains to be considered for recommending new medium size flour mills in the study area.

If 15 % of total wheat production in 1982-83 is taken as a base for the proposition of new flour mills. Baberu block can establish 6, Bisanda block 10 and Kamasin block 4 new mills. But on the basis projected figures of wheat production for the year 2000.

Table 14
Proposed Medium Size Flour Mills

Sl. No.	Nyaya Panchayat	Actual/Projected annual production of wheat (in metric tonnes)		Amount available for milling i.e. 15 % of total (in metric tonnes)		Annual capacity available for recommending new mills.		No. of proposed mills existing proposed		Suggested locations
		1982-83	2000-01	1982-83	2000-01	1982-83	2000-01	1982-83	2000-01	
1	2	3	4	5	6	7	8	9	10	11
1.	Nibhaur	1549	2236	232	335	232	335	2	1	Jalalpur
2.	Bhabhua	1567	1999	235	298	235	298	3		
3.	Karhuli Muafi	2006	2175	300	326	300	326	2	1	Marka
4.	Paras	1394	1726	209	258	209	258	2		
5.	Santer	1443	1650	216	247	216	247	3		
6.	Hardauli	1924	2323	288	348	288	348	10	3	Baberu T.A.
7.	Bagehta	1370	1610	205	241	205	241	2		
8.	Palhari	1934	2262	288	339	288	339	3	1	Palhari
9.	Badagaon	1241	1514	186	227	186	227	2		
Total block Baberu		14429	17485	2159	2619	2159	2619	29	6	
10.	Audaha	2007	2267	301	340	301	340	3	1	Audaha
11.	Bira	808	1055	121	158	121	158	3	1	Bira
12.	Narainpur	1140	1372	171	205	171	205	2		
13.	Kamasin	1979	2293	296	243	296	243	4	1	Kamasin
14.	Sunahuli	516	989	122	148	122	148	3		
15.	Parsauli	1343	1800	201	270	201	270	3	1	Parsauli

1	2	3	4	5	6	7	8	9	10	11
16.Sanda Sani	1327	1702	199	255	199	255	2			
17.Chhilolar	995	1249	149	187	149	187	4			
Total block Kamasin	10415	12726	1560	1906	1560	1906	24	4		
18.Bhadehdu	1797	2219	269	332	269	332	2	1	Korram	
19.Bisanda Rural	3328	3893	499	583	499	583	5	2	Bisanda T.A.	
20.Chandrayal	1367	2527	290	379	290	379	3	1	Punahur	
21.Chausad	2711	3635	406	552	406	552	2	1	Ballan	
22.Kurrahi	2307	3063	346	459	346	459	2	1	Dabhani	
23.Pawaiya	1935	2938	290	425	290	425	3	1	Marsuli	
24.Oren Rural	2132	2976	319	431	319	431	5	2	Oren T.A.	
25.Singhpur	1361	2271	204	340	204	340	3	1	Singhpur	
Total block Bisanda	17439	23372	2613	3601	2613	3501	25	10		
Total tahsil Baberu	42291	53583	6332	8026	6332	8026	78	20		

Khandseri Industry :

Though there is a thorough competition between paddy and sugarcane crops, the area of sugarcane production has been much minimized by the popular paddy production which provides better return to the farmers. However, about 1350 metric tonnes sugarcane is produced in the tahsil annually which is utilized mainly in gur and rab (molasses) making. One mini sugar plant can be installed at Baberu based on local availability of sugarcane.

Dal Mills :

Pulses like Arhar, Mung (Kidney bean), Urd, lentil and gram etc. are available in surplus quantity which offer opportunity for dal

milling industry in the study area. If the surplus quantity is processed by mills one dal mill at Bisanda can be established.

Proposed live stock based industry :

In an agricultural region like tahsil Baberu which is rich in live stock resources there are good prospects of live stock based industries. With the increasing population the demand of milk products and leather goods is increasing at a fast rate, therefore the proper planning of cattle products is required.

It is evident from the table 2.5 that the study area has 146191 cows and 57192 buffaloes. But the dairy and milk product industries are almost absent in the tahsil. It is advisable that one dairy unit of about 25 to 50 buffaloes can be established at Baberu, Bisanda and Oran each. These units will function as nuclei around which the future dairy development schemes will concentrate. At the next phase if dairy and milk products are more they can be established at Bhabhuwa, Kamasin, Marka, Murwal, Kurrahi, Ingua Mau, Badagaon, Palhari and Musiwan etc.

The industries based on hides and skins show sound potentials in the tahsil as there is a good number of cattle and other animals. The tanning of leather, which is widely done by the chamars of the area is very much traditional and primitive, therefore it is advisable that tanning cum training centres should be established at Kamasin, Oran, Bisanda and Augasi etc. The villages having all weather link roads should be developed as collection centres of hides, skins bones and horns. Simauni, Hardauli, Parsauli, Audaha, Birraon, Bhadehdu and Singhpur can serve as collection centres. These villages can also supply proposed hides to the village cobblers for making shoes and other leather products.

When making the field survey, it was observed that the

village tanners and shoes makers face a variety of problems such as lack of goods quality calf leather, leather accessories etc. These problems can be eliminated by providing good quality leather and shoe making implements and accessories for tanning ~~and~~ training ~~and~~ centres .

Industries serving agriculture and agricultural engineering works :

With the developing agricultural techniques and practices, the demand for improved agricultural implements for precise and timely farming operations is also increasing in the study area. The repairing and servicing of agricultural implement is done by the indigenous wood workers and smiths. The repairing of tractor, pumping sets, winnowing fans and other implements is done by the small shops located at Baberu and Bisanda. These shops are not capable to cope with increasing needs of the study area (See fig. 6.4 A & 6.4 B).

It is, therefore, advisable that the new factory of improved agricultural implements making should be started locally to meet out local demands and to utilize local skill. Baberu, Bisanda, Kamasin and Oran can be proper locations for agricultural engineering workshops. These works shops can produce more iron ploughs and other agriculture implements on the one hand and provide servicing and repairing facilities on the other.

The servicing units can be established at least one in each nyaya panchayat. The village artisans, smiths and wood workers should be provided employment at these centres. Besides, a few other industries also have good scope for future development. These are fisheries, poultry, piggery, bidi making, ice candy, neel making, Ayurvedic medicine and paper board industries can be developed as subsidiary units to solve local unemployment and seasonal employment of the local farmers.

From the above analysis it is clear that the recommendations

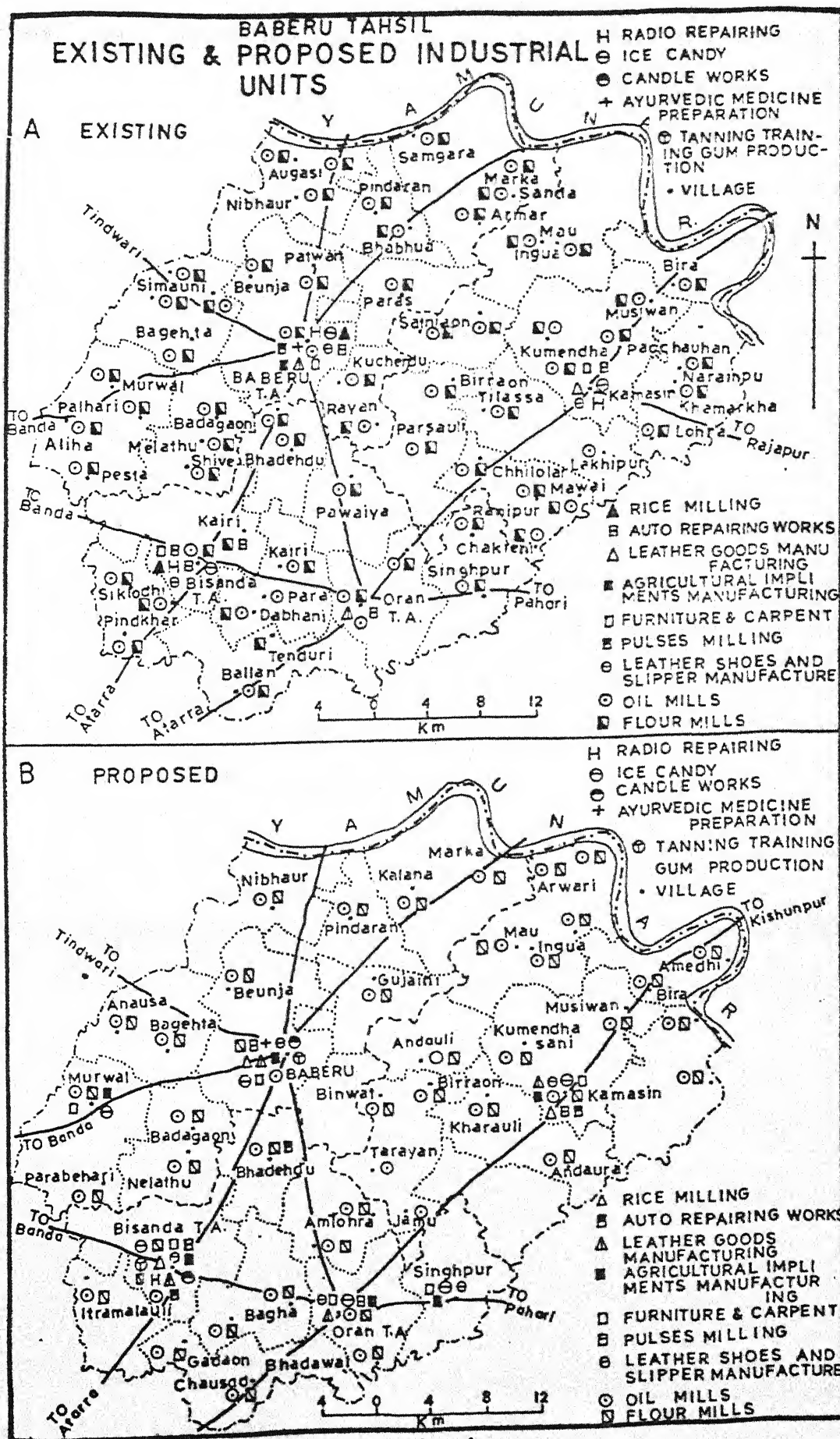


FIG. 6.4

made for industrial development in the study area are limited mainly to the agrobased, live stock based and agro servicing industry. The reasons behind it are clear as the main concern was to provide a realistic frame works of industrial development on the one hand and to bring co-ordination between the development of agriculture and industry on the other so that they may contribute to eliminating of the problems of unemployment, disguised unemployments and a long term economic development of the study area. The suggested industries ^{will} not only put a check on the out flow of rural capital and talent by providing scope for viable investments and returns but also have innovative- cum generative character and accelerate the process of economic development and modernization. At the same time, these industries will require collective effort and full co-operation as well as government incentives like medium and long terms credit power rebate, supply of equipments on hire purchase system, technical assistance, research consultancy, training and demonstration services.

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C H A P T E R : S E V E N

CONCLUSIONS AND RECOMMENDATIONS

7.1 DEMARCATION OF PLANNING UNITS :

The region or area for economic planning purposes has always been a debatable issue. The macro region at national level Meso region at State level and micro region at district level has already been recognised by the planners and adopted by many research scholars for this purpose. The homogeneity of a planning region with geographical boundaries has been neglected due to various reasons. Planning in India has basically been implemented by the politico-administrative personnel for politico-administrative region. Observing such lacuna Dubashi has well mark "The absence of regional planning is a gap of a peculiar sort in Our planning mechanism, Planning in our country has been sectoral rather than spatial. As a result, spatial, regional or area planning in the scientific sence of the term has never been introduced in our country so far. Of course, we have plans at the state, district, block and village levels. More often than not, they are no more than break-ups of sectoral programmes or more accurately, schemes of departments"¹.

Geographers and regional planners have since very begining been trying to introduce regional planning at different levels. That is why the planners now realise the needs for micro level planning at village, tahsil and district levels².

During the Fourth Five Year Plan the planning commission prepared some guide lines for the preparation and implementation of district level plans because these satisfied up to some extant the following criteria.

- (i) Continuous geographical area,
- (ii) Homogeneous administrative machinery,
- (iii) Reliable statistical data,
- (iv) Existance of growth pole and growth centres; and
- (v) Adjustment of administrative boundaries with geographical boundaries.

But at present for micro level planning. They have to think in other important terms. Upto tahsil level there is a homogeneity of administrative machinery. There is a slight gap between a tahsil and block or nyaya panchayat administration. Now the time has come, when we have ^{to} expand our administrative machinery upto nyaya panchayat level for the sound and balanced development of our economically backward villages.

Here, in delineating the planning units at tahsil level, three main ingredients have been taken for the purpose. The cumulative number of the indices of third and fourth order service centres, percent of fallow and cultivable waste, percent of double cropped area ^{and} irrigated area; ^{and the} number of industrial workers and number of industries have been taken into account (fig.7.1). All the items have been arranged in an ascending order and indexing from 1 to 25 have been done for each item. The index numbers of each nyaya panchayat have been cumulated. At last, the cumulative numbers have been divided into five categories such as below 50 (First category), 50 to 60 (Second category), 60 to 70 (Third category) 70 to 90 (Fourth category) and above 90 (Fifth category). Five nyaya panchayats i.e. Paras, Baghta, Sunahuli, Audaha and Santar fall in the first category. Three nyaya panchayats i.e. Karhuli Muafi, Narainpur and Bira are in the second category. Five nyaya panchayats i.e. Palhari, Bhabhua, Kamasin, Badagaon and Badagaon are in the third category. Six nyaya panchayats i.e. Bhadehdu, Parsauli, Chausad, Chhilolar, Bisanda rural and Oran rural are included in the fourth category. Six nyaya panchayats i.e. Pawaiya, Nibhaur, Chandrayal, Kurrahi, Hardauli and Singhpur are in the fifth category (Table 1).

Thus, we got the spatial units for planning socio-economic development of the study area. The categories of units mentioned above also show the preferential order for planning socio-economic & infrastructural facilities. The nyaya panchayats which fall in the first category need first and foremost attention for agro-industrial and infra-structural development. The second, third, fourth and fifth category of nyaya panchayats show an ascending order of development for these three major ingredients of spatial planning.

BABERU TAHSIL DEMARICATION OF PLANNING UNITS

CUMULATIVE INDEX NUMBERS OF
SERVICE CENTRES, INDUSTRIAL UNITS
AND WORKERS, FALLOW AND CULTIVA-
TED, IRRIGATED AREA AND DOUBLE-
CROPPED AREA.

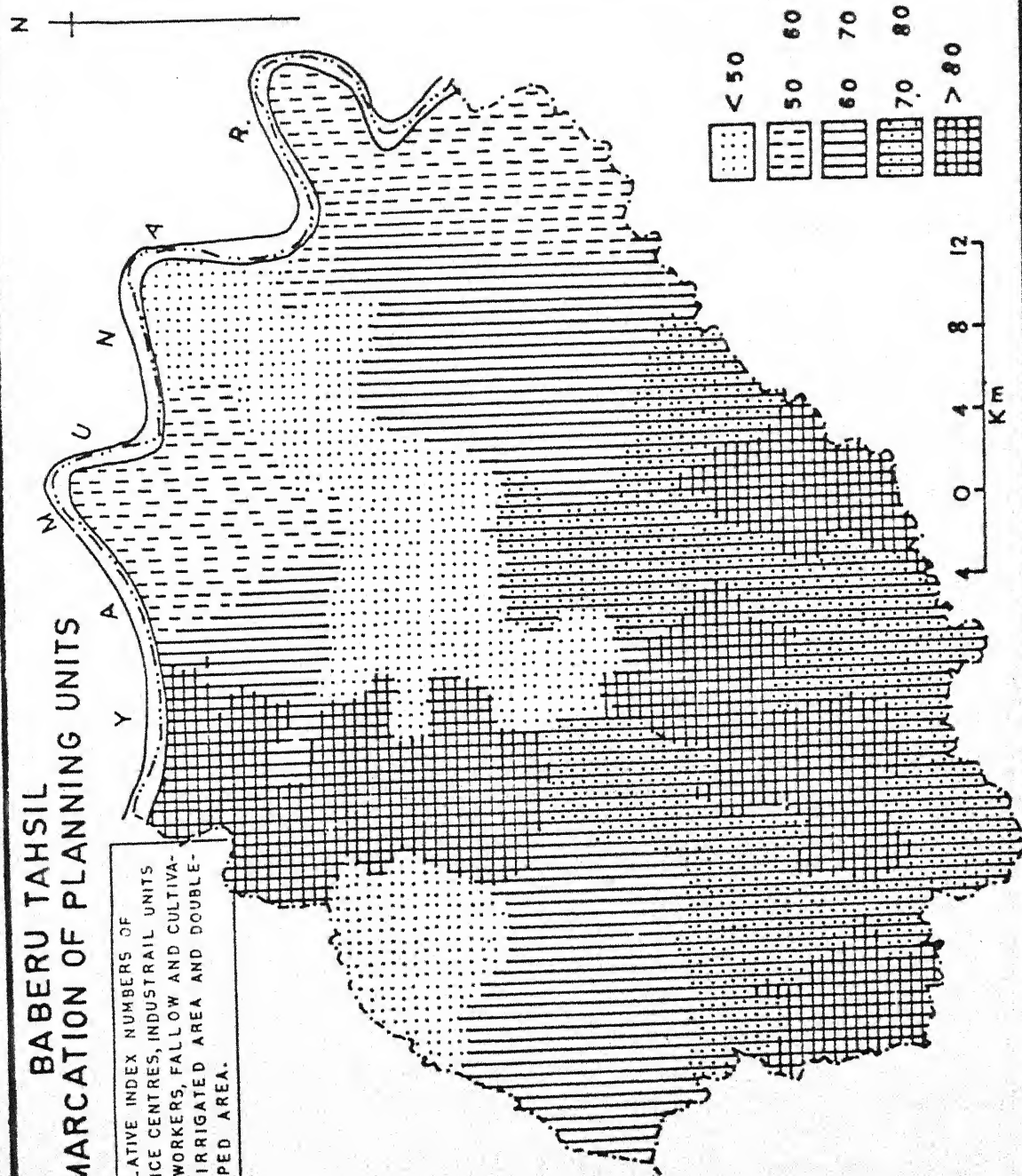


FIG.7-1

Table 1
Indexing for the Demarcation of Planning Units

Sl. No.	Nyaya Panchayats	No. of Industries	Index no.	Industrial employment	Index no.	Double cropped area	% of nett cropped area	Index no.	Irrigated area
1	2	3	4	5	6	7	8	9	10
1.	Paras	14	9	24	14	218	6.57	6	148
2.	Bagehta	14	9	19	10	29	0.56	2	99
3.	Sunahuli	9	5	17	8	38	1.16	4	198
4.	Audaha	10	6	18	9	62	0.77	3	128
5.	Santar	10	6	15	6	713	21.36	14	619
6.	Karhuli Muafi	15	10	21	12	1264	14.61	11	2597
7.	Narainpur	5	1	7	1	255	5.59	5	689
8.	Bira	10	6	11	3	16	0.49	1	32
9.	Palhari	15	10	25	15	810	11.84	8	705
10.	Bhabhua	18	11	25	15	512	13.14	9	879
11.	Kamasin	21	13	51	17	876	11.12	7	1651
12.	Badagaon	12	8	21	12	1327	27.53	18	963
13.	Sandasani	10	6	16	7	823	15.58	12	1409
14.	Bhadehdu	7	3	12	4	2399	65.04	24	2640
15.	Parsauli	10	6	19	10	1296	24.25	17	1967
16.	Chausad	11	7	16	7	3407	60.42	23	3643
17.	Chhilolar	6	2	10	2	898	22.68	16	1782
18.	Bisanda Rural	19	12	28	16	1644	22.54	15	1885
19.	Oran Rural	12	8	15	6	2275	49.73	20	2515
20.	Pawaiya	10	6	17	8	2185	56.49	22	2117
21.	Nibhour	11	7	20	11	616	13.52	10	492
22.	Chandrayal	7	3	15	6	1862	50.29	21	2102
23.	Kurrahi	8	4	13	5	3434	72.90	25	3675
24.	Hardauli	12	8	21	12	1228	19.09	13	2911
25.	Singhpur	10	6	23	13	1527	31.31	19	1768

Sl. No.	Nyaya Panchayats	% of nett cropp-ed area	Index no.	Fallow land	% of nett cropp-ed area	Index no.	Culti-vable waste	% of nett cropp-ed area	Index no.
1	2	11	12	13	14	15	16	17	18
1.	Paras	4.46	4	73	2.20	2	132	3.97	5
2.	Bagehta	1.91	3	136	2.62	4	295	5.70	16
3.	Sunahuli	6.08	5	337	10.35	23	59	1.81	1
4.	Audaha	1.60	2	486	6.09	14	404	5.06	13
5.	Santar	18.54	9	75	2.24	3	144	4.31	10
6.	Karhuli Muafi	30.03	15	103	1.19	1	162	1.87	2
7.	Narainpur	15.10	8	356	7.90	18	480	10.52	22
8.	Bira	0.99	1	394	12.23	24	329	10.22	21
9.	Palhari	10.30	6	282	4.12	8	361	5.27	14
10.	Bhabhua	22.56	12	106	2.72	5	175	4.49	11
11.	Kamasin	20.90	11	338	4.29	9	317	4.02	6
12.	Badagaon	19.98	10	168	3.48	7	237	4.91	12
13.	Sanda Sani	26.68	14	328	6.21	15	292	5.52	15
14.	Bhadehdu	71.58	24	185	5.01	11	130	3.52	4
15.	Parsauli	36.81	17	297	5.55	13	227	4.24	9
16.	Chausad	64.61	23	163	2.89	6	237	4.20	8
17.	Chhilolar	45.01	18	279	7.04	17	326	8.23	20
18.	Bisanda Rural	25.84	13	390	5.34	12	300	4.11	7
19.	Oran Rural	54.98	21	370	8.08	20	115	2.51	3
20.	Pawaiya	54.49	20	189	4.86	10	205	5.27	14
21.	Nibhaur	10.80	7	397	8.73	22	724	15.90	23
22.	Chandrayal	56.78	22	294	7.94	19	243	6.56	19
23.	Kurrahi	78.02	25	307	6.51	16	288	6.11	18
24.	Hardauli	45.26	19	537	8.35	21	388	6.03	17
25.	Singhpur	36.25	16	638	13.08	25	850	17.42	24

Sl. No.	Nyaya Panchayat	Third order service centres	Index no.	Fourth order service centres	Index no.	Index no.
1	2	19	20	21	22	23
1.	Paras	-	-	1	1	41
2.	Bagehta	-	-	2	2	46
3.	Sunahuli	-	-	1	1	47
4.	Audaha	1	1	1	1	49
5.	Santar	-	-	2	2	50
6.	Karhuli Muafi	1	1	1	1	53
7.	Narainpur	-	-	1	1	56
8.	Bira	1	1	-	-	57
9.	Palhari	1	1	2	2	64
10.	Bhabhua	1	1	1	1	65
11.	Kamasin	-	-	3	3	66
12.	Badagaon	-	-	2	2	69
13.	Sanda Sani	1	1	-	-	70
14.	Bhadehdu	2	2	1	1	73
15.	Parsauli	1	1	1	1	74
16.	Chausad	1	1	-	-	75
17.	Chhilolar	1	1	-	-	76
18.	Bisanda Rural	-	-	3	3	78
19.	Oran Rural	-	-	1	1	79
20.	Pawaiya	-	-	1	1	81
21.	Nibhaur	1	1	2	2	83
22.	Chandrayal	-	-	2	2	92
23.	Kurrahi	1	1	-	-	94
24.	Hardauli	1	1	4	4	95
25.	Singhpur	1	1	-	-	104

7.2 THE OBSTACLES :

Although the problems related to the development of industrial sectors have been touched upon in the previous chapter, it is necessary at this point to analyse them with a view to understand its joint impact and inter-relationship over the space economy. Such an understanding is necessary to take out the economy from the grip of their hurdles. The obstacles and problems related to the different sectors of economy are so inter mixed that they can not be removed and solved without considering their spatial, sectoral and temporal coincidence. If we have to develop the regional economy which has the elements of sectoral disintegration must be eliminated. A few of the obstacles are discussed below :

Natural Elements :

Natural elements like floods, droughts, hails and frost etc. adversely affect the space economy of the study area ^{from} year to year in the rainy season. The floods of Bagain, Garara, Kalind nalas are the most spectacular phenomenon. Mainly on the both sides of these rivers and nalas floods not only damage the growing Kharif crops but also paralyse the transport channels and the people in some areas where they are forced to lead a Marooned life for months. Their cattle starve and some times fall victim to the swollen currents of these rivers and nalas. The agriculture and animal husbandary has no better chances till these hazards are not minimized and overcome.

The unreliable nature of monsoon some times poses a great threat of drought which affect more seriously than floods as the means of irrigation are limited. A few nyaya panchayats of study area has dependence on rains for water requirement. It's failures bring very bad consequences to the Kharif as well as Rabi crops. In drought years the water table goes very down and the wells and tube wells get dry.

The water discharge in the rivers dwindles to nothing. In these circumstances the farmers have to face great difficulty and their existence becomes in danger.

Some mini hazards like frost, and hails during winter and springs season when Rabi crop is in growing and riping stage, bring heavy loss to the standing crops.

These natural hurdles make the agriculture a precarious business on the average only once in a period of five years, does a farmer expect^a normal harvest. He has to think very deeply for cereals and seeds for next two years. Thus, the grain markets look deserted.

It is evident from the above discussion that the management of irrigation gets the highest priority in the agricultural development and planning programmes of the study area.

Infrastructural Inadequacy :

The limited infrastructural facilities like canals, tube-wells, electricity, roads, storage and marketing facilities severely restrict the economic and commercial potentials of agriculture. As much as 71 % of the total nett cropped area lacks of irrigation which is very much discouraging for growing vegetables and various others commercial crops. The inadequacy of irrigation and marketing facilities restrict the commercial farming in the study area. The local respondents have to depend on Banda and Fatehpur for vegetables supply. It is paradoxical that in a predominantly agricultural region like Baberu Tahsil such agricultural products flow in the opposite direction. The local production of these items is limited. Besides these inadequacies the procurement of inputs like chemical fertilizers, poultry feed and timely expert advice are difficult to be found in the villages.

Social Taboos :

The caste taboos also play their important role in adopting commercial activities. The production of vegetables and fruits has been adopted by the Kachhies, the dairy products have been taken by the milk men. The poultry farming has been adopted mostly by the moslem families. Due to caste taboos there is no organised system of these commercial activities like co-operative societies, co-operative for the procurement and distribution of agricultural produce and their distribution. They are rather mismanaged. The organisers are interested in advancing credit or subsidy from the rural banks or other financing agencies. The mismanagement results in poor service, mistrust and poor demand. The societies other than farmers' work in their own way and exist on paper for the purpose of obtaining loans and materials on subsidized rates. These materials are sold on higher prices to other persons without being used in production process.

Besides above mentioned situation there are difficulties associated with marketing, ware housing, procurement and storage and transportation of various agricultural, live- stock and other products. That is why the capable farmers do not indulge in commercial farming like fruits vegetables and other perishable goods. They also do not utilize their milk for dairying and commercial purposes. The non cereal crops are mostly grown by the farmers having bigger land holdings.

Sectoral- Spatial Co-ordination :

There is no co-ordination between commercial, agricultural and manufacturing sector. Besides sugar cane, the raw materials obtained from the study area are exported out side it. The hides,

bones, horns and bristles are collected at a few centres and sent out sides the region for their use in manufacturing activities. Paddy is the main industrial crop produced in surplus quantity it is not fully utilized in the regional mills and surplus quantity is sent outsidess the region as their is no storing and procuring facilities. There is no horizontal exchange of goods and c mmodities between the central places of same level.

7.3 SOCIAL, SPATIAL AND FUNCTIONAL PLANNING :

After deciding the planning units of five categories and analysing their prevailing problems we come to the stage of inter-sectoral, spatio function^{-al} and social planning. The task is not so easy. It is rather complex and comprehensive. The different socio-economic groups like big farmers, small peasants and landless labourers, business men and industrialists; village and town folk vary in their interests with each other. The nature of administration, political, socio economic and technological aspects have their role in the rural development. The gap or distortion of any one of them may disturbed the whole planning process. These aspects must be worked out in detail by the experts. Their must be coherence and complementarity among the aspects. Therefore this scenari of economy and service structure must be very much clear.

The main objective of this intricate and complex planning should be the creation of maximum employment opportunities in such a way that they may increase the general way of living of the masses, particularly of the landless labourers. Given the priority, such infrastructure should be developed which may minimize the natural calamities and help in the diversification and commercialisation of agriculture, so that the supply of necessary commodities may fulfil the local demand by increasing the purchasing power of the

local people. According to C. Subramaniam "adequate production of those goods and services that matter to the masses and diffusion of opportunities for production and employment"³ are the basic objectives of rural development planning. At the same time the various institutions providing financial and organisational infrastructure at suitable time and location should help to maintain an increasing trend in agricultural and industrial productivity sectors and integrate the whole space economy which lead to a balanced but dynamic space economy. Thus, the spatial structure may avoid various problems like environmental ^{degradation} over crowding, transport demands etc. Subramaniam points out that 'solutions to the basic problems of underdevelopment must be found in the countryside and hence "directly improving the conditions of living in the rural areas..... emerges as the core of planning objectives"⁴.

Land and water management :

As the study area is basically of agrarian economy. The first and four most prerequisite of the spatial planning is the management of land and water. As discussed in chapter number two the tahsil has 5.69 % fallow land of the nett cropped area which must be immediately taken under cultivation by making a provision of irrigation. The suggested pump canals at Marka, Kheda and Jorawarpur can remove the practice of fallowing and raise the cropping intensity. Another item of land management is the removing of cultivable waste which is about 4.67 % of the total geographical area. The cultivable waste is in the form of ravines along the river channels and seasonal nalas and patches undulating surface. It requires levelling by mechanical as well as man power techniques and a forestation along the river channel and nalas.

The patches of barren land which constitute about 5.50 %

of the total geographical area are in almost each nyaya panchayat in the form of reh soil covered with pebbles. Both these types can be removed by using gypsum in the reh soils and deep ploughing by tractors in the pebble covered soils.

However, the success of above mentioned land management depends on the proper management of irrigation facilities. As mentioned earlier the floods, droughts and hails determine, to a great extent, the fate of farmers and ultimately the economy of the region. Unless these hazards are not overcome through proper management of water any hope may convert into despair. Agriculture is the main regional economy. Therefore, occupies a place of paramount importance in the economic development of the tahsil. The storage of flooded water of the river Bagain and Garara in reservoirs, ponds and bunds must be the main concern of water management programmes. At the same time we must have well set canal network and tube well systems for watering each farm as and when required. Beginning of canals, reservoirs, ponds, tube wells and regulation of flooded water can provide job to a number of skilled and unskilled unemployed people. Thus, the seasonal unemployment can be minimised and the wastage of manpower can be saved. There must be a comprehensive water management scheme which may conserve the flooded water of Bagain, Garara and Yamuna rivers. For this purpose the co-operation of state government is necessary. A detailed survey of the flooded and ravineous areas along the river basins by the trained surveyors can help in formulating a water management scheme which will include the construction of bunds reservoirs and lakes. The erection of pump canal and digging of tube wells at suitable locations can be the important part of such scheme.

Provision of infrastructural facilities :

The land and water management will certainly increase the

agricultural production of the study area. It will also increase the industrial production. This situation shall demand more infrastructural facilities like power and transport. The shortage and draw back of both these elements shall hinder the progress and industrial production. The development of interrelationship between infrastructure and production facilities is a felt need. Ultimately it will contribute to the human welfare. It should also attract the educated and progressive mass of the society. It is possible only when the lack of basic amenities like running water, electric power, sanitation, transport facilities in the rural areas is removed so that the educated youth may get urban facilities. The regular supply of these amenities is necessary to heighten the rural economy. All weather roads in inaccessible areas of the tahsil is the need for all weather accessibility and vehicular transport net work. Electric supply is one of the delicate elements of infrastructure, the failure and rationing of which adversely affects the production, diversification and commercialisation of crops discourage the industrialist disturb the drinking water supply and sanitation in rural areas. In order to remove these losses the study area requires a wide electrification programme. The present situation of electrification is quite dissatisfactory as only 34 % of villages have been electrified till recently. Fig. no. 3.6A suggests the erection of various K.V. lines, transmission stations in villages upto the end of this century.

The transport net work is better than power supply. The area within 8 Km. from the road is 92.76 % in the tahsil. For better accessibility it has been suggested that all the seasonal roads must be converted into all weather roads and all the Kachcha roads should be metalled. Due repairs of the roads should be done for

better transportation. All the service centres must be linked with all weather metalled roads. The rest 7.24 % of inaccessible area must be made accessible and active by constructing all weather roads in the nyaya panchayats concerned.

Other facilities :

Alongwith the provision of power and transport infrastructure facilities for financial assistance is highly needed as it activise the regional economy. Therefore, the banking and credit facilities play a very vital role in providing a progressive rural economy which would utilise the technical educational and institutional inputs. The commercialisation of agriculture depends upon the provision of credit mainly to medium and small farmers. There have been observed numerical growth of the branches of Tulsī Gramin Bank but the benefits have been received by the big farmers only the uneducated and poor farmers do not get the benefits of credit due to wrong and false methods of advanced credit, the poor uneducated and socially backward people do not have their accessibility to the rural banks and financial institutions. Therefore, these rural banks shall adopt new approach to advance loans to the genuine persons and place. They must be as follows :

- (i) The farming inputs should be made available to the weaker farmers ;
- (ii) Recovery must be made only during the harvest season;
- (iii) Tools must be provided to the rural artisans, like smiths, carpenters, weavers etc.; and
- (iv) There must be separate and better credit limits to small farmers.

Marketing and co-operative facilities :

Besides, previously mentioned infrastructure facilities

also play an important role in the commercialisation of agriculture. At present there is no co-operative society in the study area which may combine the provisions of credit with production or marketing. Therefore, a multipurpose farmers' service society to provide credit and other necessary services is required so that this society may dispose all types of credit, supply inputs including fertilisers processing and marketing. These co-operative societies must maintain agricultural machinery like tractors, harvesters, threshers etc. which may be hired by the farmers as and when required. Such type of service shall make the farming operations ^{easier} These co-operative societies can also maintain warehouses and cold storage at service centres, where the farmers can procure their product and sell when the prices are favourable. The marketing facilities include standardisation, storage, transport and selling techniques, according to Kuo-chun, 'All these functions are inter dependent therefore they must be comprehensively organised'. These co-operative societies can encourage small farmers to produce cash crops like vegetables, fruits and poultry farming or cattle dairying by providing loans and marketing facilities. The co-operative societies may have their purchasing wing which can purchase the farm products at the farm. These co-operative societies may have their different branches and different centres. Thus, these co-operative societies can help in the intensification and diversification of agriculture. This can be done only by the providing membership to medium and small farmer.

Co-ordination between different sectors :

The co-ordination between agriculture, industry and service is very often over-looked during spatial planning. This includes proper location of industries and services as an integrated part of whole

space economy. There must be an hierarchy of services and scale of industries from higher level of service centres. These sectors must have forward and backward functional linkages. There must be model of different sub-sectors of economy which may interact with each other with each other with in a hinter land of various level service centres. The suitability of model must be judged on the following grounds :

- (i) Creation of better job opportunities ;
- (ii) Creation of the demand for additional commodity for better health and living; and
- (iii) ensuring a hygienic environment. At this point the potential of resources must be considered in qualitative terms with the above consideration of service centres, industrial locations, infrastructure and organisation set up. The plan should be prepared for techno-economic development of the region.

Social planning :

For the balanced economic development of a region the social planning is necessary intern of quality of life as stated earlier. Mostly the planners have developed the models of economic planning. No doubt, the economic problems such as the distribution of income, savings, inflation etc., are important, but at the same time, how economic development affects social and cultural life is also of great significance.

To modify social behaviour and human skills the provision of health and educational facilities has been made all over the country. Thus sociologists agree that the services should be widely distributed throughout the rural areas and the primary education must be given the top priority.

First of all we should have the knowledge of house hold behaviour because it is the family which works as decision making unit. It decides that who of the family member will work on the farms, who will go to school, who will be sent to the city to seek additional income. Thus the dynamics of family decision making process is crucial in making family economic plan. Secondly, the attitudes and social and cultural condition of the family affect the village community in adopting the industrial and agricultural technology which help in upgrading the rural economy.

There is, therefore, a great need for planning each individual family and its behaviour must be carefully studied for making the family planning process progressive and more effective. Only then we shall be able to improve the quality of life, which is the ultimate goal of our planning.

To take a family for a micro level planning is advantage in the sense that the weakest section of the society is directly benefited instead of trickle-down process. The another aspect of social planning is the land ownership. The difficult problem related with the ownership is how to make the small and marginal farmers responsive to appropriate technology, use of water, seeds, credit and other facilities for higher productivity.

Another important aspect related to the social planning is the well defined rural social structure. Unless the traditional structure breaks out and some sort of the flexibility emerges, it is very difficult to solve economic problem wholly. Education and health facilities can remove the superstitions and blind beliefs from the society and the structure can undergo some sort of change.

The Rich^{and the} poor, the big and small, the haves and have nots are social disparities which must be removed through our planning process. It should also enlarge productive capacity and provide distributive justice for those sections of society which have no assets.

The political leadership which also enjoys the economic leadership must shift from the elites to the economically backward ones so that they can force the pace of distributed justice in the process of economic development.

Functional planning :

Alongwith the sectoral integration there must be an appropriate plan of functional structure at various level service centres. Various services like education, health, communication, administration, veterinary services, banking, co-operative etc. have been discussed and proposed at various service centres in chapter five. Baberu is the only first level service centre which commands almost the whole study area. Various services are available at this centre. It is the biggest administrative, medical, banking and agro service centre. It is a nodal point, therefore its future development requires a well set plan. Its surrounding area is rich in paddy, wheat, pulses and sugarcane production which provide a strong base for the industrial development at this centre. Flour Mills, Rice mills, Hal mills, Gur and Khandasari Mill, Mini Sugar Mills and various demand based industries like tractor repairing and trolley manufacturing soap making, agarbatti making, agricultural implement making, furniture making and engineering and chemical making industries can be developed which can provide job opportunity for skilled and non-skilled persons.

There are 5 IInd order service centres with in the influence zone of Baberu service centre for the development of their hinterlands. There must be a suitable plan of suitable function (table 2).

Table 2
Planning for Nyaya Panchayat Units of Different Categories

(Area in hectares)								
Category	Nyaya Panchayats	Propo- sed number of Indus- tries	Propo- sed Indus- trial emplo- yment	Propo- sed nett crop- ped area	Propo- sed double crop- ped area	% of propo- sed nett crop- ped area	Propo- sed Irrig- ated area	% of propo- sed nett cropped area
1	2	3	4	5	6	7	8	9
Ist	1. Paras	12	21	3517	516	14.67	218	6.19
	2. Bagehta	13	15	5593	210	3.75	139	2.48
	3. Sunahuli	10	19	3635	103	2.93	238	6.54
	4. Audaha	9	16	9953	129	1.45	198	2.23
	5. Santar	11	18	3546	1214	34.23	915	25.90
	Total	55	99	25144	2172	8.63	1708	6.79
IIInd	1. Karhuli Muafi	14	20	9902	2210	24.92	3511	39.44
	2. Narainpur	4	6	5382	417	7.74	912	16.94
	3. Bira	12	16	3926	95	2.16	65	1.65
	Total	30	42	19210	2712	14.89	4488	24.65
IIIrd	1. Palhari	18	24	7461	1315	17.62	1035	13.87
	2. Bhabhua	16	25	4160	1122	26.97	1263	30.36
	3. Kamasin	25	50	8520	1586	18.61	2069	24.28
	4. Badagaon	10	16	5211	2119	40.64	1296	24.87
	5. Sanda Sani	8	15	5884	1501	25.50	1712	29.09
	Total	77	130	31236	7642	24.46	7375	23.61

Category	Nyaya Panchayats	Proposed fallow land	% of proposed nett cropped area	Proposed cultivable waste	% of proposed nett cropped area	Proposed third order service centres	Proposed fourth order service centres
1	2	10	11	12	13	14	15
Ist	1.Paras	3	0.09	3	0.09	-	1.Gujaini
	2.Bagehta	5	0.09	5	0.09	-	1.Tola Kalan 2.Bagehta
	3.Sunahuli	10	0.27	4	0.11	-	1.Satnison
	4.Audaha	10	0.12	6	0.06	1.Ingua	1.Mau
	5.Santar	4	0.11	6	0.16	-	1.Santar 2.Anwan
	Total	33	0.13	24	0.09	1	7
IIInd	1.Karhuli Muafi	5	0.05	4	0.04	1.Karhuli Muafi	1.Sangara
	2.Narainpur	9	0.16	5	0.09	-	1.Narainpur
	3.Bira	12	0.30	4	0.10	1.Bira	-
	Total	26	0.14	13	0.07	2	2
IIIInd	1.Palhari	12	0.16	9	0.12	1.Aliha	1.Palhari 2.Pests
	2.Bhabhua	9	0.21	8	0.02	1.Bhabhua	1.Pindaren
	3.Kamasin	8	0.09	3	0.03	-	1.Musiwan 2.Pachhauhan 3.Kumendha Sani
	4.Badagaon	8	0.15	5	0.09	-	1.Badagaon 2.Melathu
	5.Sanda Sani	12	0.20	5	0.08	1.Sanda Sani	-
	Total	49	0.15	30	0.09	3	8

1	2	3	4	5	6	7	8	9
IVth	1. Shadendu	9	13	3992	3128	79.35	3018	75.60
	2. Parsauli	10	15	5853	2210	37.75	2317	39.58
	3. Chaudad	9	12	6027	5168	95.74	3913	64.92
	4. Chhilolar	5	10	4539	1589	35.00	1962	43.22
	5. Bisanda Rural	24	42	7963	2316	29.08	2546	31.97
	6. Oran Rural	15	20	5048	3286	65.09	2791	55.28
Total		72	112	33422	17697	52.95	16547	49.50
Vth	1. Pawaiya	11	15	4268	3931	92.10	2615	61.26
	2. Nibhaur	10	17	5641	1418	25.13	676	11.98
	3. Chandrayal	8	15	4228	2814	66.55	2119	50.11
	4. Kurrahi	6	13	5291	4795	90.62	4018	75.94
	5. Hardauli	14	20	7329	2012	27.45	3528	48.13
	6. Singhpur	11	21	6331	2917	46.07	2374	37.49
Total		60	101	33088	17887	54.05	15330	46.33
Grand Total		294	474	141100	48110	34.09	45448	39.20

1	2	10	11	12	13	14	15
IVth	1. Bhadehdu	8	0.20	3	0.07	1. Bhadehdu 2. Sathi	1. Kurrem
	2. Parsauli	6	0.10	8	0.13	1. Birraon	1. Jamu
	3. Chausad	5	0.08	6	0.09	1. Chausad	-
	4. Chhilolar	16	0.35	9	0.19	1. Chhilolar	-
	5. Bisanda Rural	13	0.16	7	0.08	-	1. Pawai 2. Lauli Tihamau 3. Kairi
	6. Oran Rural	9	0.17	2	0.03	-	1. Majhiwan Sani
	Total	57	0.17	35	0.10	5	6
Vth	1. Pawaiya	8	0.18	3	0.07	-	1. Pawaiya
	2. Nibhaur	18	0.31	15	0.26	1. Augasi	1. Jalalpur 2. Majhiwan
	3. Ghandrayal	6	0.14	5	0.11	-	1. Siklodhi 2. Kusma
	4. Kurrahi	10	0.18	4	0.07	1. Kurrahi	-
	5. Hardauli	19	0.25	8	0.10	1. Hardauli	1. Baberu Rural 2. Beunja 3. Patwan 4. Achhah
	6. Singhpur	19	0.30	15	0.23	1. Singhpur	-
	Total	90	0.24	50	0.15	8 4	9
Grand Total		245	0.17	152	0.10	15	32

(1) Marka Service Centre :

The hinterland of Marka comprises of Bhabhua, Augasi and Karhuli Muafi service centres and their service region. The Marka region is characterised by the subsistence type of economy with a high future potential. It has a good scope for transformation of this subsistence structure into dairy, vegetable, poultry etc. by providing necessary prerequisites. The third order service centres must be developed by giving priority to local resource based industries like flour mills, oil mills, shoe and chappal making and leather tanning, agricultural implement making etc. As they are growing service centres, a few demand based industries like, engineering works, agricultural implement making, iron furniture, soap making, ice candy etc. are also suggested for development at the fourth order service centre of pindaran, Anwan, Gujaini, Santar, Patwan, Jalalpur, Majhiwan, Sangara, Oil mills, flour mills, leather tanning indigenous, shoes making, agricultural implement repairing etc. can be developed along with the services suggested in chapter IV.

(ii) Murwal Service Centre :

Within the complementary region of murwal there are six second order service centres, i.e., Nardauli and Aliha. All these centres are big villages and their service regions are predominantly agricultural in economy. In Murwal service centre rice mill, flour mill, oil mill, shoes and chappal making and iron plough making etc. should be developed along with the various agro services. The service region of Murwal suffers from the flood and soil erosion from the Garara river. Therefore, the first and foremost prerequisite for better agricultural production is the control of floods and soil erosion. Secondly, the service region of third and fourth order service centres are basically of agriculture economy therefore, provision of

irrigation is most significant for increasing the production and development of agro based industries. These areas are rich in live stock resources, therefore, leather tanning, shoes making^{and}, Gobar Gas Plants can be developed. A bone crussing plant for making fertilizer can be established at Hardauli which has a road side location. At the fourth order service centres an off season employment opportunity must be created by developing yarn spinning, Khadi weaving, Tat Patti Making, Sewing of Garments etc.

(iii) Bisanda Service Centre :

Bisanda service region is rich in agricultural specially paddy production because the Atarra Branch of Ken canal provides sufficient water for its service area. Due to bumper paddy production, Bisanda is developing as a rice milling centre. Due to its nodal location and abundance paddy supply, it has more potentials for the development of rice, dall oil and flour mills alongwith the various demand based industries in the third order services of Sathi, Chausad, Bhadehdu and Kurrahi. Dair^ying and poultry farming can be developed in the service areas of fourth order service centre. They can also be developed as collection centres of milk and other animal products.

(iv) Oran Service Centre :

Oran has got^a nodal location as it is linked with Bisanda, Kamasin, Baberu and Atarra by metalled roads. Its hinterland is rich in agricultural of operations. Therefore, this centre can operate as a depot of agricultural machinery, farm implements, seeds and fertilizers. Besides agro-based industries like flour mill, oil mill, live stock based industries can^{be} established at this centre. The service centres of third and fourth order can function as collection centres of oil seeds, paddy, hides and skins.

(v) Kamasin Service Centre :

The service zone of Kamasin centre is also a region of subsistence cultivation but is different from other areas. The service zone of Kamasin lacks irrigation facilities, therefore, the region produces only one crop mostly of millets, Jowar, Bajra, Gram, Arhar and wheat. The water management is the first prerequisite for economic planning and rejuvenation of economy. At the same time yarn spinning, Khadi weaving, Tatpatti making, Carpentry, live stock based industry of small scale and house hold size must be developed in the proposed service centres of its service zone.

7.4 CONCLUSIONS :

From the above discussion it is clear that the stress has been laid on the following major recommendation :

- (i) The development of infrastructure like irrigation facilities, power lines and roads etc. must be made for the commercialisation and diversification of agriculture sector ;
- (ii) The small scale industry which can be served as vehicle for intensification of agriculture, should be developed mostly at second and third order service centres based on local resources. This can eliminate the problems of unemployment and under employment as weitz stresses "one of the most important lessons derived from past experience in the developing countries is that the main contribution toward the elimination of both unemployment and under employment should come from the agricultural sector and that principal tool for achieving the objective of full employment in agriculture is the diversification of production"⁵.
- (iii) The seasonal unemployment must be curtailed through the construction works of infra-structure base ;

- (iv) The cattle rearing for dair^y_xing, meat and cultivation of foods and vegetables is the significant media to solve seasonal unemployment;
- (v) The technical unemployment should be absorbed in the operating, maintenance and repairs of farm equipments at the co-operative depots, milk collecting, food and marketing, processing and running the marketing paraphernalia;
- (vi) The social change can be brought by employing educated and technical skills in these functions without considering the caste of person ;
- (vii) The expansion of administrative machinery, co-operative organisation, field survey and supervisory staff and the staff engaged in the construction of physical infrastructure would provide employment sufficient to the educated technical and non-technical; and
- (viii) The demand for various high level consumer goods due to increased income and purchasing power will ultimately lead to rise in the level of living standards and improving the quality of life which is the sole aim of our planning efforts.

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APPENDIX I.A

Sample Survey Questionnaire

Identification :

Name of the village : _____
 Location Code No. : _____
 Nyaya Panchayat : _____
 Development block : _____

1. Occupational Structure (Year 19)

Categories	Total	Male	Female
66 1	2	3	4

Population

Cultivators

Agricultural Labourers

Livestock-Forestry etc.

Mining & Quarrying

Household Industry

Manufacturing other

than house hold

industry.

Construction

Trade and Commerce

Transport & Communi-
cation

other services

PART 'A' Agricultural Activities

2. Agricultural land use (during 19)

- i. Total Geographical area Area in acres/hect.
 ii. Net area sown -
 (a) Gross cropped area
 (b) Double cropped areas
 (c) Area under forest
 (d) Area under orchards
 (e) Fallow land (including pastures)

II

3. Cropping pattern and use of modern agricultural inputs (Year 19)

Crop Season/ crops	Total area sown in acres/ hect	Irriga- ted area in acres/ hect.	Area under H.Y.V.	Fertilizer used		Pesticide used	
				Area in acres/ hect.	Qty. in Kg.	Area in Acres/ hect.	Qty. in Kg.
1	2	3	4	5	6	7	8

A.Kharif :

- 1.Paddy
- 2.Jawar
- 3.Bajra
- 4.Maize
- 5.Other
(Fooder
etc.)

B.Rabi :

- 1.Wheat
- 2.Gram
- 3.Barley
- 4.Oil seed
- 5.Others

C.Perrenial

- 1.Sugarcane
- 2.Arhar
- 3.Others

Total

4.Use of improved agricultural implements :

Sl. No.	Item	No. of Farmers using				Remarks
		19	19	19	19	
1	2	3	4	5	6	7

1. Improve ploughs
2. Cultivators
3. Tractors
4. Threshers

III

1	2	3	4	5	6	7
5. Winnowing						
6. Levellers						
7. Others						
(Harrow, Seed-drill Chaff-cutter etc.)						

5. Source-wise and season-wise area irrigated (Year 19)

Sl. No.	Means of irrigation	No.	Area irrigated in acres/ hect.				Remarks
			Kharif	Rabi	Zaid	Total	
1	2	3	4	5	6	7	8
1. Masonary well							
2. Tube-wells							
(a) State tube well							
(b) Private Tube well							
3. Cannals							
4. Tanks/Reservoirs							
5. Others(Specify)							
Total							

6. Live-stock population (Year 19)

Sl. No.	Item	No.	Percentage of the total
1	2	3	4
1. Cows			
(a) Ordinary			
(b) Improved quality			
2. Bullocks			
3. Buffaloe			
(a) Ordinary			
(b) Improved quality			
4. Sheeps			
5. Goats			
6. Pigs			
7. Others(birds etc.)			
Total			

IV

7. Extension services and credit facilities (Year 19)

Sl. No.	Type of facility	Whether exists in the village Yes/No	If no, the name and distance of place where facility is available		Remarks are you satisfied with the existing facility. Yes/No. If no, what improvement do you suggest ?
			Place	Distance travelled in Km.	
1	2	3	4	5	6
1.	Seed distribution centre				
2.	Fertilizer distribution centre				
3.	Pesticides distribution centre				
4.	Agricultural				
5.	Implements				
6.	Warehouse and cold storage				
7.	Co-operative society				
8.	Co-operative Bank				
9.	Land mortgage Bank				
10.	Scheduled Bank				

Part 'B' Industrial Activities

1. Name of the firm/Industry/ :
craft with full address _____

2. Category of industry :
Large/medium/small/cottage _____

3. Type and nature of craft/ :
products manufactured _____

4. Nature of ownership- :
Sole proprietor/partnership/
private/public sector- _____

If the activity is carried on jointly, what is the share of the household in :

Capital investment : _____

Profit/losses : _____

V

5. Is the industry seasonal ? :
if seasonal, months of operation-

Yes/No

6. Starting year of production :
Capital investment (in Rs.)

Fixed capital :

Working capital :

7. Production -

Value Value
(in Qty) (in Rs.)

Installed capacity :

Annual production :

8. Operating expenditure (during 19) :

Sl. No.	Item	Expenditure (Rs. Np.)
1	2	3

1. Rent
2. Wages (paid labour only)
3. Fuel charges
4. Taxes
5. Transportation charges
6. Other expenses

Total

9. Sales (during 19) :

Sl. No.	Type of commodity produced	Quantity manufactured	Quantity consumed with in house hold	Product sold			Remarks
				Qty.	Value in Rs.	Type of Transaction cash/bar-ter	
1	2	3	4	5	6	7	8

VI

10. Net annual income (during 19) in Rupees :

11. Employment :

Sl. No.	Sex	No. of workers employed on wages				Remarks
		Skilled	Unskilled	Whole time	Part time	
1	2	3	4	5	6	7

1. Male

2. Female

Total

12. Facilities available :

Sl. No.	Item/facility	From where received	Remarks
1	2	3	4

1. Raw Material

2. Water supply

3. Electricity

4. Technical assistance

5. Financial assistance

6. Marketing facility

7. Others (specify)

13. Difficulties and problems :

Sl. no.	Items	Remarks
1	2	3

1. Raw materials

2. Labour supply

3. Marketing

4. Octroi charges

5. Utilities

6. Attitude of authorities

7. Others (specify)

14. Are you satisfied with your occupation, if not, why ?

Suggestions for improvement :

15. Future expansion programme :

VII

Part 'C' Various Facilities

Sl. No.	Type of facility	Whether existing in the village Yes/No	If no, the name and distance of the nearest place where facility is available		R e m a r k s Are you satisfied with the services offered? Yes/No, if no what improvement do you suggest ?
			Place	Distance in Km.	
1	2	3	4	5	6

1. Educational

Nursery/Primary school.

Junior High School

Higher Secondary/ Inter College

2. Medical :

Private practitioner

Dispensary/Clinic

Primary health centre

Maternity & Child Welfare Centre

Civil Hospital

Veterinary Hospital

Artificial in Sanitation Centre-

3. Postal and Communication :

Branch Post Office

Sub-Post Office

Post & Telegraph Office

Telephone Exchange

News Paper (Press)

4. Marketing and Trade facilities :

Fair

Hat/Weekly market

VIII

1	2	3	4	5	6
---	---	---	---	---	---

Retail Daily
market

Wholesale regu-
lated market

Market Yard

Warehouse and
cold storage

5. Electricity :

Power Sub-station

Hydle Power Station
(Main)

6. Transportation :

Request bus stop

Regural bus stop

Bus depot

Railway halt

Railways Station

Railway Junction

River Ferry

(a) Regular

(b) Seasonal

(c) Occasional

7. Administrative :

V.L.W. Office

Dev.Block Office

Tahsil Head Quarter

District H.Q.

Police Outpost

Police Station

Kotwali

Court

IX

Occupational Structure Solution

1. Agricultural :

Water logging

Reclamation

Irrigation

Wild animals

Other (specify)

2. Social Facilities :

Lack of schools

Medical facilities

Drinking water

Electricity

3. Lack of Mutual Co-operation

4. Attitude of administrators and planning officials.

5. Others, if any (specify)

APPENDIX I.B
List of Villages in Tahsil Baberu

Code no.	Village	Population 1981
1	2	3
	N.P.Nibhaur	13194
1.	Gaura	353
2.	Jalalpur	2232
3.	Kabirpur	226
4.	Augasi	1743
5.	Jafarpur	U.I.
6.	Chak Tola	U.I.
7.	Tola Quazi	1571
8.	Nibhaur	2092
9.	Majhiwan	2726
10.	Badauli	1380
11.	Baghaila	341
	N.P.Bhabhua	10699
12.	Bakal	1113
13.	Shamsuddinpur	683
14.	Shahpur	233
15.	Dundaoli Muafi	U.I.
16.	Ban Barauli	559
17.	Miyan Barauli	1272
18.	Mantha	969
19.	Pindaran	3463
20.	Bhabhua	2481
	N.P.Karhuli Muafi	17689
21.	Sangara	2748
22.	Marka	3340

XI

	2	3
23.	Sanda	1961
24.	Kalana	645
25. K	Karhuli Muafi	1152
26.	Kumendha	509
27.	Armar	1149
28.	Adhaon	1285
	N.P.Paras	8993
29.	Majhila	1251
30.	Gujaini	2073
31.	Bamhraula	471
32.	Para Bannu Begam	479
33.	Pakhrauli	1835
34.	Paras	1855
35.	Arthara	868
36.	Poon	1481
	N.P.Santar	9518
37.	Anwan	1238
38.	Umrahani	2171
39.	Santar	960
40.	Kuchendu	1650
41.	Kayal	1249
42.	Rayan	2250
	N.P.Hardauli	20503
43.	Beunja	1469
44.	Bhadvari	776
45.	Patwan	3773
46.	Tharthua	606

XII

1	2	3
47.	Gurauli Sukul	280
48.	Baberu rural	3606
49.	Umari	618
50.	Achhah	1220
51.	Hardauli	7497
52.	Jugrehli	658
53.	N.P. Bagehta	13646
53.	Saimara Ghat	U.I.
54.	Simauni	3136
55.	Amarganj	64
56.	Tola Kalan	2091
57.	Bagehta	2202
58.	Panderi	1341
59.	Anausa	703
60.	Bhatauli	31
61.	Kelhanua	108
62.	Madua	55
63.	Baghanda	358
64.	Ragauli	1012
65.	Dewartha	1513
66.	Alampur	1032
67.	N.P. Palhari	15782
67.	Rewal	U.I.
68.	Murwal	4125
69.	Rampurwa	178
70.	Aliha	3269
71.	Mawai Khurd	311
72.	Pesta	2042

XIII

1	2	3
73.	Para Behari	1447
74.	Korari	521
75.	Ghansaul	558
76.	Janwara	500
77.	Palhari	2831
78.	N.P. Badagaon	11254
78.	Ahar	1754
79.	Badagaon	2106
80.	Melathu	1954
81.	Mawai Zunnardar	341
82.	Shive	2947
93.	Barauli Azam	949
94.	Nelathu	1203
Total Block Baberu		121278
N.P.	Audaha	15976
85.	Arwari	1338
86.	Charke	1752
87.	Matehana	875
88.	Mudwara	1093
89.	Audaha	1358
90.	Ingua	4061
91.	Mau	5469
N.P.	Bira	8185
92.	Kheda	1034
93.	Barauli	72
94.	Kathar	486
95.	Khatan	602

XIV

1	2	3
96.	Dandau	636
97.	Raghavpur	1020
98.	Amedhi	1206
99.	Bira	3129
	N.P. Narainpur	12225
100.	Bena Mau	1014
101.	Gaura Lakhanpur	140
102.	Lakhanpur	1275
103.	Jorewarpur	707
104.	Narainpur	1662
105.	Amlokhar	1323
106.	Khamarkha	1057
107.	Achharil	500
108.	Ghausad	165
109.	Kuchauli	376
110.	Itra Budhauni	899
111.	Lohara	2507
112.	Syohat	593
	N.P. Kamasin	16264
113.	Deorar	392
114.	Pannah	1133
115.	Musiwan	2964
116.	Bankat	99
117.	Sikari Lakhanpur	694
118.	Pachhauhan	3502
119.	Kithai	397
120.	Kumendha Sani	2363

1	2	3
121.	Kadohar	175
122.	Kamasin	4595
	N.P. Sunahuli	7831
123.	Satniaon	2191
124.	Bhanti	940
125.	Budhauri	1007
126.	Sunahuli	467
127.	Sunahula	450
128.	Gurauli Uperhar	482
129.	Andauli	1376
130.	Pali	918
	N.P. Parsauli	14745
131.	Binwat	1455
132.	Dataura	676
133.	Birraon	2402
134.	Barauli Mustkha	U.I.
135.	Kurra Bujurg	1768
136.	Parsauli	3523
137.	Tarayan	2175
138.	Jamu	2746
	N.P. Sanda Sani	13620
139.	Kharauli	1345
140.	Sanda Sani	2699
141.	Deh	97
142.	Tilansa	3103
143.	Dhundhui	1385
144.	Teradarsenda	285
145.	Bamhraula Sani	104

XVI

1	2	3
146.	Andaura	1275
147.	Lodhaura Khurd	263
148.	Mankhundi	392
149.	Lakhipur	354
150.	Banthari	1518
151.	Bachhaundha Seni	697
152.	Kolaura	120
	N.P. Chhilolar	11293
153.	Chhilolar	2655
154.	Udaki Muafi	194
155.	Bhadeon	773
156.	Mawai	874
157.	Mamsi Khurd	2399
158.	Dighaura	420
159.	Chakrehi	2471
160.	Bhiti	1507
Total Block Kamasin		100132
	N.P. Bhadehdu	12123
161.	Korram	2312
162.	Phuphundi	1656
163.	Karinga	483
164.	Bhadehdu	3263
165.	Sathi	1633
166.	Daftara	858
167.	Akona	1918
	N.P. Bisanda Rural	12426
168.	Koni	676

XVII

1	2	3
169.	Umrehnda	654
170.	Pawal	1999
171.	Ghoori	965
172.	Bisanda Rural	1505
173.	Lauli Tika Mau	2085
174.	Kairi	3596
175.	Kurra Khurd	631
176.	Saya	315
	N.P. Chandrayal	11791
177.	Intra Malauli	1137
178.	Siklodhi	1719
179.	Chandrayal	641
180.	Punahur	4451
181.	Pindkhar	1830
182.	Kusma	1456
183.	Khataura	557
184.	N.P. Chausad	17625
184.	Gadaon	2689
185.	Ballan	4367
186.	Chausad	3520
187.	Tendura	4118
188.	Nandan Mau	2062
189.	Lamehata	869
	N.P. Kurrahi	19157
190.	Rasulpur	146
191.	Bachheundha	1032
192.	Kurrahi	6465
193.	Bagha	4233

XVIII

1	2	3
194.	Para	2510
195.	Amawan	2639
196.	Dabhani	3132
	N.P. Pawaiya	12516
197.	Kauhara	802
198.	Pawaiya	2620
199.	Beldan	808
200.	Marsuli	2362
201.	Jarohara	1907
202.	Amlohra	2090
203.	Bisandi	1928
	N.P. Oran Rural	12198
204.	Oran	3377
205.	Majhiwan Sani	2919
206.	Sahpur Sani	2038
207.	Kullu Keda	1709
208.	Bhadawal	1430
209.	Beri Birhandi	725
	N.P. Singhpur	13293
210.	Rachha	563
211.	Renipur	2728
212.	Palhari Sani	410
213.	Singhpur	4912
214.	Utarwan	2758
215.	Pahedi Khurd	426

XVIII

1	2	3
194.	Para	2510
195.	Amawan	2639
196.	Dabhani	3132
	N.P. Pawaiya	12516
197.	Kauhara	802
198.	Pawaiya	2620
199.	Beldan	808
200.	Marauli	2362
201.	Jarohara	1907
202.	Amlohra	2090
203.	Bisandi	1928
	N.P. Oran Rural	12198
204.	Oran	3377
205.	Majhiwan Sani	2919
206.	Sahpur Sani	2038
207.	Kullu Keda	1709
208.	Bhadawal	1430
209.	Beri Birhandi	725
	N.P. Singhpur	13293
210.	Rachha	563
211.	Ranipur	2728
212.	Palhari Sani	410
213.	Singhpur	4912
214.	Utarwan	2758
215.	Pahadi Khurd	426

XIX

1	2	3
216.	Itwan	1177
217.	Bilgawan	319
Total Block Bisanda		111129
218.	Baberu T.A.	9695
219.	Bisanda T.A.	7193
220.	Oran T.A.	4147
Total Tahsil Baberu		353579

Source : State Census Office Uttar Pradesh, Lucknow.

Where : N.P. = Nyaya Panchayat

T.A. = Town Area

U.I. = Uninhabited

APPENDIX-II.1

Land use in Tahsil Baberu, 1982-83.

(Area in Hectares)

Sl. No.	Nyaya Panchayat/T.A.	Geographical area	Fallow land	Cultivable waste	Permanent Pastures	Forests including groves and trees	Barren and uncultivable waste	Land put to non-agricultural uses
1	2	3	4	5	6	7	8	9
1.	Nibhaur	7062	397	724	3	159	808	419
2.	Bhabhua	4630	106	175	-	29	193	231
3.	Karkhuli Muafi	9478	103	162	2	28	177	360
4.	Paras	3947	73	132	-	19	117	189
5.	Hardaulis	9123	537	389	2	36	1057	672
6.	Santar	3954	75	144	2	24	131	201
7.	Bagehta	6125	136	295	2	21	244	255
8.	Palhari	8287	282	361	2	31	455	317
9.	Badagaon	5864	168	237	1	29	317	293
Total Block Baberu		58370	1877	2618	14	376	3499	2935
10.	Audaha	9617	486	404	-	19	234	494
11.	Bira	4676	394	329	-	16	435	283
12.	Nerainpur	6599	356	480	1	102	746	354
13.	Kamasin	9613	338	317	-	91	510	481
14.	Sunahuli	4241	337	59	-	12	376	204
15.	Parsauli	6411	297	227	-	17	302	225
16.	Sanda Sani	6466	328	292	-	19	339	207
17.	Chhilolar	5263	279	326	-	29	398	272
Total Block Kamasin		52886	2815	2434	1	305	3340	2520

XX

1	2	3	4	5	6	7	8	9
18. Bhadehdu	4465	195	130	-	25	222	215	
19. Bisanda Rural	8493	390	300	-	26	238	236	
20. Chandrayal	4679	294	243	3	21	177	239	
21. Chausad	6492	163	237	1	16	206	231	
22. Kurrahi	5761	307	298	1	22	205	228	
23. Pawaiya	4732	199	205	2	20	199	242	
24. Oran Rural	5593	370	115	6	23	256	249	
25. Singhpur	7302	638	950	11	237	408	280	
Total Block Bisanda	47506	2536	2368	24	390	1901	1920	
26. Baberu T.A.	91	-	9	-	-	17	55	
27. Bisanda T.A.	36	-	-	-	-	16	20	
28. Oran T.A.	30	6	-	-	1	4	19	
Total Tahsil Baberu	159909	7234	7429	39	1072	9777	7469	

Source : Data Collected from tahsil head quarter, Baberu.

APPENDIX II-2

Agricultural Land in Tahsil Baberu, 1982 - 83 .

(Area in Hectares)

Sl. No.	Nyaya Panchayat	Net cropped area	Double cropped area	Gross cropped area	Rabi cropped area	Kharif cropped area	Zaid cropped area	Purified area for sugar cane	Irrigated area	Gross Irrigated area
1	2	3	4	5	6	7	8	9	10	11
1.	Nibhaur	4553	616	5169	3243	1926	-	-	492	378
2.	Bhabhua	3996	512	4408	3081	1327	-	-	879	1222
3.	Karhuli Muafi	8646	1264	9910	7575	2335	-	-	2597	2377
4.	Paras	3318	218	3536	2045	1491	-	-	148	292
5.	Bansar	3337	713	4090	2771	1319	-	-	619	376
6.	Hardauli	6431	1228	7659	5465	2194	-	-	2911	3178
7.	Bagehta	5172	29	5201	3040	2161	-	-	99	229
8.	Palhari	6839	810	7649	5271	2378	-	-	705	1082
9.	Badagaon	4819	1327	6146	4449	1697	-	-	963	1162
10.	Total Block Baberu	47051	6717	53768	36940	16828	-	-	9413	11796
10.	Audaha	7980	62	8042	5505	2537	-	-	128	186
11.	Bira	3219	16	3235	2012	1223	-	-	32	45
12.	Narainpur	4560	255	4815	3310	1505	-	-	689	947
13.	Kamasin	7876	876	8752	5626	3123	3	-	1651	2012
14.	Sunahuli	3253	38	3291	1915	1376	-	-	198	209
15.	Parsauli	5343	1296	6639	4114	2424	1	-	1967	2366

XXII

1	2	3	4	5	6	7	8	9	10	11
16.Sardasani		5291	923	6104	4211	1891	2	-	1409	1892
17.Chhilolar		3959	898	4857	3107	1649	1	-	1782	2292
Total Block Kamasin		41471	4264	45735	39900	15828	7	-	7956	9939

18.Bhadehdu		3688	2399	6087	3224	2860	3	-	2640	3351
19.Bisanda Rural		7293	1644	8937	6679	2250	7	1	1885	2606
20.Chandrayal		3702	1962	5564	3336	2223	-	-	2102	2818
21.Chausad		5638	3407	9045	4939	4106	-	-	3643	4365
22.Kurrahi		4710	3434	8144	4531	3613	-	-	3675	4380
23.Pawaiya		3885	2195	6080	3553	2527	-	-	2717	3428
24.Oran Rural		4574	2275	6849	4068	2781	-	-	2515	3241
25.Singhpur		4877	1527	6404	3834	2570	-	-	1768	2487

Total Block Bisanda	38367	18743	57110	34164	22935	10	1	20945	26676
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Total Tahsil Baberu	126899	29724	156613	101003	55591	17	1	38214	48411
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Source : Data Collected from Tahsil Head Quarter, Banda.

APPENDIX II-3

Production Area of Different Crops in Tahsil Baberu, 1982-83.

(Area in Hectares)

Sl. No.	Nyaya Panchayat	Food Grain															
		Paddy		Wheat		Barley		Jowar		Millet		Maize		Other food grain		Total food grain	
		To-tal	Irr-iga-ted	To-tal	Irr-iga-ted	To-tal	Irr-iga-ted	To-tal	Irr-iga-ted	To-tal	Irr-iga-ted	To-tal	Irr-iga-ted	To-tal	Irr-iga-ted	To-tal	Irr-iga-ted
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Nibhaur		212	189	1793	173	65	-	1436	2	201	-	-	-	9	-	3716	364
2. Bhabhua		784	778	1814	732	20	1	1221	4	186	-	-	-	8	-	4033	1515
3. Karhuli Muafi		827	780	2323	788	30	2	955	5	140	-	-	-	6	-	4181	1585
4. Paras		463	395	1615	365	4	-	712	-	-	-	-	-	2	-	2796	760
5. Santar		629	618	1671	598	-	-	721	-	-	-	-	-	-	-	3021	1216
6. Hardauli		916	891	2228	841	-	-	903	2	10	-	-	-	4	-	4061	1734
7. Bagehta		318	293	1587	267	-	-	828	-	39	-	-	-	3	-	2775	560
8. Palhari		815	782	2239	768	-	-	315	-	-	-	-	-	-	-	3369	1550
9. Badagaon		721	695	1437	649	-	-	413	-	-	-	-	-	-	-	2571	1344
Total Block Baberu		5685	5421	16707	5191	119	3	7404	13	576	-	-	-	32	-	30523	10628
10. Audaha		89	61	2551	69	51	-	1032	-	251	-	-	-	10	-	3684	130
11. Bira		22	15	908	17	32	-	597	-	120	-	-	-	8	-	1687	32
12. Narainpur		452	332	1286	374	39	-	612	-	149	-	-	-	9	-	2547	706
13. Kamasin		958	796	2221	897	55	3	1271	-	309	-	-	-	11	-	4825	1696
14. Sunahuli		99	95	917	107	41	-	660	-	136	-	-	-	8	-	1861	202

XXIV

Sl. No.	Nyaya Panchayat	P u l s e s															
		Urd		Kidney bean		Lentil		Gram		Pea		Arhar		Other pulses		Total Pulses	
		To-tal	Irr-iga-ted	To-tal	Irr-iga-ted	To-tal	Irr-iga-ted	To-tal	Irr-iga-ted	To-tal	Irr-iga-ted	To-tal	Irr-iga-ted	To-tal	Irr-iga-ted	To-tal	Irr-iga-ted
1	2	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
1. Nibhaur		8	-	4	-	323	3	1399	92	4	-	300	-	-	-	2038	95
2. Bhabhua		6	-	2	-	309	4	1328	88	5	-	207	1	-	-	1857	93
3. Karhuli Muafi		9	1	3	-	753	6	3265	215	8	1	364	2	-	-	4402	225
4. Paras		3	-	2	-	203	3	883	58	2	-	232	-	-	-	1325	61
5. Santar		2	-	2	-	275	3	1194	79	5	1	205	-	-	-	1683	83
6. Hardauli		5	-	4	-	543	5	2357	155	8	-	342	1	-	-	3259	161
7. Bagehta		3	-	2	-	302	2	1310	86	2	-	337	-	-	-	1956	88
8. Palhari		2	-	-	-	524	2	2273	150	3	-	369	-	-	-	3171	152
9. Badagaon		2	-	-	-	442	2	1919	126	2	-	264	-	-	-	2629	128
Total Block Baberu		40	1	19	-	3674	30	15928	1049	39	2	2620	4	-	-	22320	1096
10. Audaha		5	-	4	-	319	4	2855	29	3	-	419	-	-	-	3605	33
11. Bira		3	-	2	-	117	2	1043	7	2	-	202	-	-	-	1369	9
12. Narainpur		4	-	2	-	192	2	1716	160	2	-	248	-	-	-	2164	162
13. Kanasin		6	-	3	1	325	8	2916	383	3	1	516	-	-	-	3769	393
14. Sunahuli		3	-	2	-	111	2	993	46	2	-	227	-	-	-	1338	48

[illegible]

XXVI

Sl. No.	Nyaya Panchayat	Other Crops													
		Sugar Cane		Potato		Tobacco		Jute		Cotton		Flax		Tumeric	
		Total	Irrigated	Total	Irrigated	Total	Irrigated	Total	Irrigated	Total	Irrigated	Total	Irrigated	Total	Irrigated
1	2	51	52	53	54	55	56	57	58	59	60	61	62	63	64
1.	Nibhaur	1	1	1	1	1	1	-	-	-	-	14	-	-	-
2.	Bhabhua	2	2	2	2	1	1	-	-	-	-	15	-	-	-
3.	Karhuli Muafi	5	5	2	1	2	2	-	-	-	-	26	-	-	-
4.	Paras	1	1	1	1	-	-	-	-	-	-	10	-	-	-
5.	Santar	1	1	1	1	2	2	-	-	-	-	8	-	-	-
6.	Hardauli	3	3	2	2	-	-	-	-	-	-	25	-	-	-
7.	Bagehta	1	1	1	1	1	1	-	-	-	-	12	-	-	-
8.	Palhari	1	1	2	1	-	-	-	-	-	-	12	-	-	-
9.	Badagaon	2	2	2	2	-	-	-	-	-	-	10	-	-	-
Total Block Baberu		17	17	14	12	7	7	-	-	-	-	132	-	-	-
10.	Audaha	-	-	-	-	-	-	-	-	-	-	9	-	-	-
11.	Bira	-	-	-	-	-	-	-	-	-	-	6	-	-	-
12.	Narainpur	-	-	1	-	-	-	-	-	-	-	9	-	-	-
13.	Kamasin	1	1	3	3	-	-	-	-	-	-	24	-	-	-
14.	Sunahuli	-	-	2	-	-	-	-	-	-	-	8	-	-	-

XXVII

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
15.Parsauli	1127	947	1507	1069	16	1	827	-	250	-	-	-	5	-	3732	207	
16.Sanda Sani	901	679	1489	765	12	1	769	-	187	-	-	-	3	-	3361	1445	
17.Chhilolar	1087	958	1117	968	14	1	671	-	163	-	-	-	3	-	3055	1827	
Total Block Kamasin	4735 1976	3783 1	11696	4266	260	6	6439	-	1565	-	-	-	57	-	24752	8055	
18.Bhadehdu	1976	1965	2101	617	24	-	218	-	30	-	-	-	2	-	4331	2582	
19.Bisanda	3810	3790	3992	1190	5	-	412	-	35	-	-	-	2	-	8156	4980	
20.Chandrayal	1983	1990	2183	619	3	-	102	-	-	-	-	-	2	-	4273	2599	
21.Chaused	2968	2960	3170	927	4	-	211	-	-	-	-	-	3	-	6356	3887	
22.Kurrahi	2496	2489	2699	880	2	-	318	-	-	-	-	-	5	-	5520	3569	
23.Pawaiya	2012	1991	2263	628	3	-	209	-	100	-	-	-	4	-	4591	289	
24.Singhpur	1281	1192	1592	400	12	2	529	-	228	-	-	-	5	-	3647	1594	
25.Oran Rural	2327	2268	2493	826	14	-	632	-	141	-	-	-	5	-	5612	2994	
Total Block Bisanda	18953	18635	20333	5987	47	2	2631	-	534	-	-	-	28	-	42486	24624	
Total Tahsil Baberu	29293	27859	48796	15444	426	11	16474	13	2675	-	-	-	117	-	97761	4807	

XXVIII

1	2	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
15.Parsauli	6	-	3	-	238	3	2132	455	3	-	416	-	-	-	2798	458	
16.Sanda Sani	5	-	2	-	243	4	2182	327	1	-	312	-	-	-	2745	331	
17.Chhilolar	4	-	2	-	179	6	1610	414	2	-	272	-	-	-	2069	420	
Total Block Kamasin	36	-	20	1	1724	31	1447	1821	18	1	2612	-	-	-	19957	1954	
18.Bhadehdu	2	-	-	-	185	4	1058	241	30	-	84	-	-	-	1359	245	
19.Bisanda	2	-	-	-	384	5	2189	172	24	2	66	-	-	-	2665	179	
20.Chandrayal	2	-	-	-	196	5	1094	191	23	-	66	-	-	-	1381	196	
21.Chausad	2	-	-	-	284	8	1619	331	42	1	121	-	-	-	2068	340	
22.Kurrahi	2	-	1	-	261	7	1486	335	38	-	107	-	-	-	1895	342	
23.Pawaiya	2	-	-	-	204	8	1165	247	26	-	75	-	-	-	1472	255	
24.Singhpur	3	-	2	-	220	8	1258	160	27	-	76	-	-	-	1586	168	
25.Oran Rural	3	-	2	-	234	10	1333	228	29	2	82	-	-	-	1683	240	
Total Block Bisanda	18	-	5	-	1968	55	11202	1905	239	5	677	-	-	-	14109	1955	
Total Tahsil Baberu	94	1	44	1	7366	116	42577	4775	296	8	5909	-	-	-	56296	4905	

XXIX

1	2	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
15.Parsauli		6530	2475	21	-	81	-	-	-	-	-	-	-	-	-	102	-
16.Sarda Sani		6106	1776	22	-	93	-	-	-	-	-	-	-	-	-	105	-
17.Chhilolar		5124	2247	16	-	61	-	-	-	-	-	-	-	-	-	77	-
Total Block Kamasin		44609	9909	153	-	582	-	2	-	2	-	-	-	-	-	739	-
18.Bhadehdu		5690	2927	12	1	13	-	-	-	-	-	-	-	-	-	25	4
19.Bisanda		10921	5159	24	1	27	1	1	-	-	-	-	-	-	-	52	2
20.Chandrayal		5654	2795	12	2	13	1	1	-	-	-	-	-	-	-	27	2
21.Chausad		3424	4227	18	1	20	-	1	-	-	-	-	-	-	-	38	2
22.Kurrahi		7415	3711	27	1	18	-	-	-	-	-	-	-	-	-	36	2
23.Pawaiya		6063	2874	13	1	14	-	-	-	-	-	-	-	-	-	27	1
24.Singhpur		5233	1762	14	1	15	1	1	-	-	-	-	-	-	-	29	1
25.Oran Rural		1295	3234	15	1	16	1	1	-	-	-	-	-	-	-	32	2
Total Block Bisanda		56595	26599	125	9	136	4	5	-	-	-	-	-	-	-	266	13
Total Tahsil Baberu		154047	48212	475	18	924	6	10	-	32	-	-	-	-	-	1441	24

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1	2	51	52	53	54	55	56	57	58	59	60	61	62	63	64
15. Parsauli	-	-	2	2	-	-	-	-	-	-	-	15	-	-	-
16. Sanda Sani	-	-	1	1	-	-	-	-	-	-	-	13	-	-	-
17. Chhilolar	-	-	2	1	-	-	-	-	-	-	-	14	-	-	-
Total Block Kanasin	1	1	11	7	-	-	-	-	-	-	-	98	-	-	-
18. Bhadehdu	3	3	3	3	-	-	-	-	-	-	-	6	-	-	-
19. Bisanda	6	6	5	4	1	1	-	-	-	-	-	10	-	-	-
20. Chandrayal	4	4	3	3	-	-	-	-	-	-	-	7	-	-	-
21. Chausad	3	3	2	2	-	-	-	-	-	-	-	8	-	-	-
22. Kurrahi	2	2	2	2	-	-	-	-	-	-	-	2	-	-	-
23. Pawaiya	1	1	2	1	-	-	-	-	-	-	-	3	-	-	-
24. Singhpur	2	2	2	1	-	-	-	-	-	-	-	2	-	-	-
25. Oran Rural	2	2	3	2	1	1	-	-	-	-	-	4	-	-	-
Total Block Bisanda	23	23	22	18	2	2	-	-	-	-	-	43	-	-	-
Total Tahsil Baberu	41	41	47	37	9	9	-	-	-	-	-	273	-	-	-

Source : Data collected from tahsil head quarter, Baberu.

XXXI
APPENDIX II-4
Production of Different crops in Tahsil Baberu
1982-83.

(Production in metric tonnes)

Sl. No.	Nyaya Panchayat	Food Grain							
		Paddy	Wheat	Barley	Jowar	Millet	Maize	Other food grain	Total food grain
1	2	3	4	5	6	7	8	9	10
1.	Nibhaur	165	1549	39	1362	133	-	4	3252
2	Bhabhua	610	1567	12	1158	123	-	3	3473
3.	Karhuli Muafi	643	2006	18	811	92	-	2	3572
4.	Paras	360	1394	3	674	-	-	1	2432
5.	Santar	499	1443	-	684	-	-	-	2616
6.	Hardauli	712	1924	-	856	7	-	2	3501
7.	Bagehta	247	1370	-	785	26	-	1	2429
8.	Palhari	634	1934	-	298	-	-	-	2866
9.	Badagaon	560	1241	-	391	-	-	-	2192
Total Block Baberu		4420	14428	72	7019	391	-	13	26333
10.	Audaha	69	2007	31	979	166	-	4	3256
11.	Bira	17	808	20	566	92	-	3	1506
12.	Narainpur	351	1140	23	580	96	-	3	2193
13.	Kamasin	744	1079	34	1165	202	-	4	4128
14.	Sunahuli	73	816	24	621	88	-	3	1625
15.	Parsauli	876	1343	9	869	162	-	2	3261

XXXII

Sl No	Nyaya Panchayat	Pulses								Grand total of food grains
		Urd	Kidney bean	Lentil	Gram	Pea	Arhar	Other pulses	Total pulses	
1	2	11	12	13	14	15	16	17	18	19
1. Nibhaur		3	0.21	235	795	4	410	-	1447.21	4699.21
2. Bhabhua		2	0.11	226	754	5	282	-	1269.11	4742.11
3. Karhuli Muafi		3	0.15	547	1854	6	497	-	2907.15	6479.15
4. Paras		1	0.11	147	501	2	316	-	967.11	3399.11
5. Santar		1	0.10	199	678	5	280	-	1163.10	3779.10
6. Hardauli		2	0.21	393	1338	6	467	-	2206.21	5707.21
7. Bagehta		1	0.11	218	743	2	460	-	1424.11	3853.11
8. Palhari		1	-	379	1290	2	504	-	2176.00	5042.00
9. Badegaon		1	-	320	1089	1	360	-	1771.00	3963.00
Total Block Baberu		15	1	2664	9042	33	3576	-	15331.00	41664.00
10. Audaha		2	0.11	307	1560	3	572	-	2444.11	5700.11
11. Bira		1	0.10	112	569	1	275	-	958.10	2464.10
12. Narainpur		2	0.11	185	938	1	338	-	1464.11	3657.11
13. Kamasin		2	0.15	314	1593	3	704	-	2616.15	6744.15
14. Sunahuli		1	0.19	107	542	2	310	-	962.19	2587.19
15. Parsauli		2	0.12	229	1166	2	568	-	1967.12	5228.12

XXXIII

Sl. No.	Nyaya Panchayat	Oil seeds						
		Mustard	Linseed	Sesamum	Castor seed	Ground nut	Other oil seeds	Total oil seeds
1	2	20	21	22	23	24	25	26
1.	Nibhaur	8	5	-	2	-	-	15
2.	Bhabhua	7	4	-	2	-	-	13
3.	Karhuli Muafi	17	10	-	2	-	-	29
4.	Paras	5	3	-	1	-	-	9
5.	Santar	7	4	-	1	-	-	12
6.	Hardauli	12	7	-	2	-	-	21
7.	Bagehta	7	4	-	1	-	-	12
8.	Palhari	12	6	-	1	-	-	19
9.	Badagaon	11	6	-	1	-	-	18
Total Block Baberu		86	49	-	13	-	-	148
10.	Audaha	13	28	-	0.52	-	-	41.52
11.	Bira	6	14	-	-	-	-	20.00
12.	Narainpur	7	16	-	-	-	-	23.00
13.	Kamasin	12	14	-	0.48	-	-	26.48
14.	Sunahuli	5	9	-	-	-	-	14.00
15.	Parsauli	8	18	-	-	-	-	26.00

XXXIV

Sl. No.	Nyaya Panchayat	Other crops						
		Sugar cane	Potato	Tobacco	Jute	Cotton	Flax	Tumeric
1	2	27	28	29	30	31	32	33
1. Nibhaur		35	15	0.43	-	-	5	-
2. Bhabhua		74	29	0.40	-	-	5	-
3. Karhuli Muafi	166	28	0.85	-	-	-	10	-
4. Paras		35	16	-	-	-	4	-
5. Santar		32	18	0.82	-	-	7	-
6. Hardauli		82	30	0.09	-	-	10	-
7. Bagehta		35	12	0.41	-	-	5	-
8. Palhari		41	30	-	-	-	6	-
9. Badagaon		60	27	-	-	-	4	-
Total Block Baberu		560	205	3	-	-	56	-
10. Audaha		-	-	-	-	-	5	-
11. Bira		-	-	-	-	-	3	-
12. Narainpur		-	15	-	-	-	4	-
13. Kamasin		33	44	-	-	-	10	-
14. Sunahuli		-	29	-	-	-	3	-
15. Parsauli		-	28	-	-	-	6	-

XXXV

1	2	3	4	5	6	7	8	9	10
16.Sanda Sani		703	1327	8	723	123	-	2	2886
17.Chhilolar		848	995	7	601	107	-	2	2560
Total Block Kamasin		3681	10415	156	6104	1036	-	23	21415
18.Bhad ehdu		1537	1797	2	207	21	-	1	3565
19.Bisanda Rural		2962	3328	3	391	23	-	1	6708
20.Chandrayal		1542	1867	2	97	-	-	1	3509
21.Chausad		2307	2711	2	200	-	-	1	5221
22.Kurrahi		1940	2307	2	301	-	-	2	4552
23.Pawaiya		1564	1935	3	198	66	-	1	3767
24.Singhpur		996	1361	7	501	151	-	2	3018
25.Oran Rural		1809	2132	8	599	93	-	2	4643
Total Block Bisanda		14657	17438	29	2494	354	-	11	34983
Total Tehsil Baberu		22758	42281	257	15617	1771	-	47	82731

XXXVI

1	2	11	12	13	14	15	16	17	18	19
16.Sanda Sani		1	0.12	234	1193	1	427	-	1856.12	4742.12
17.Chhilolar		2	0.10	172	879	2	371	-	1426.10	3986.10
Total Block Kamasin		13	1	1660	8440	15	3565	-	13694.00	35109.00
18.Bhadehdu		0.78	-	135	615	26	115	-	991.78	4456.78
19. Bisanda Rural		0.77	-	279	1266	22	91	-	1658.77	8366.77
20.Chandrayal		0.78	-	143	632	20	92	-	987.78	4396.78
21.Chausad		0.79	-	206	936	35	165	-	1342.79	6563.79
22.Kurrahi		0.78	-	189	859	31	146	-	1225.78	5777.78
23.Pawaiya		0.77	-	147	673	21	102	-	943.77	4710.77
24.Singhpur		1.17	-	159	727	22	103	-	1012.17	4050.17
25.Gran Rural		1.16	-	169	770	24	110	-	1074.16	5717.16
Total Block Bisanda		7	-	1427	6478	201	924	-	9037	44020
Total Tahsil Baberu		35	2	5751	23960	249	8065	-	38062	120793

XXVII

1	2	20	21	22	23	24	25	26
16. Sanda Sani	9	20	-	-	-	-	-	29.00
17. Chhilolar	7	18	-	-	-	-	-	25.00
Total Block Kamasin	67	137	-	1	-	-	-	205
18. Bhadehdu	5	4	-	-	-	-	-	9
19. Bisanda Rural	11	6	0.3	-	-	-	-	17.3
20. Chandrayal	5	3	-	-	-	-	-	8
21. Chausad	7	5	-	-	-	-	-	12
22. Kurrahi	6	4	-	-	-	-	-	10
23. Pawaiya	5	3	-	-	-	-	-	8
24. Singhpur	8	3	0.4	-	-	-	-	11.4
25. Oren Rural	8	4	0.3	-	-	-	-	12.3
Total Block Bisanda	55	32	1	-	-	-	-	99
Total Tahsil Baberu	209	218	1	14	-	-	-	441

XXXVIII

1	2	27	28	29	30	31	32	33
16.Sanda Sani	-	16	-	-	-	-	5	-
17.Chhilolar	-	29	-	-	-	-	6	-
Total Block Kamasin	33	161	-	-	-	-	42	-
18.Bhadehdu	100	44	-	-	-	-	3	-
19.Bisanda Rural	200	72	0.54	-	-	-	4	-
20.Chandrayal	130	45	-	-	-	-	2	-
21.Chausad	98	28	-	-	-	-	2	-
22.Kurrahi	65	30	-	-	-	-	1	-
23.Pawaiya	33	29	-	-	-	-	1	-
24.Singhpur	65	30	-	-	-	-	3	-
25.Oran Rural	66	44	0.46	-	-	-	2	-
Total Block Bisanda	757	322	1	-	-	-	18	-
Total Tahsil Baberu	1350	688	4	-	-	-	116	-

Source : Data collected from tahsil head quarter, Baberu

APPENDIX II-5

Irrigated Area by Different Sources in Tahsil Baberu, 1982-83
(Area in Hectares)

Sl. No.	Nyaya Panchayat	Canals	Govt. tube wells	Private tube wells	Tanks, Lake, Reservations	Other Means
1	2	3	4	5	6	7
1.	Nibhaur	398	59	30	-	5
2.	Bhabhua	830	27	20	-	2
3.	Karhuli Muafi	2590	5	-	-	2
4.	Paras	36	80	28	-	4
5.	Santar	592	14	8	-	5
6.	Hardauli	2896	10	2	-	3
7.	Bagehta	22	52	17	-	8
8.	Palhari	687	10	2	-	6
9.	Badagaon	995	53	10	-	5
10.	Total Block Baberu	9946	310	117	-	40
10.	Audaha	104	14	8	-	2
11.	Bira	19	-	9	-	4
12.	Narainpur	654	23	10	-	2
13.	Kamasin	1620	18	10	-	3
14.	Sunahuli	188	-	8	-	2

XXXX

1	2	3	4	5	6	7
15. Parsauli		1918	40	7	-	2
16. Sanda Sani		1373	25	8	-	3
17. Chhilolar		1748	21	11	-	2
1 Total Block Kanasin		7624	141	71	-	20
18. Bhaderdu		2575	50	10	-	5
19. Bisarda Rural		1772	74	22	-	17
20. Chandrayal		2004	82	8	-	8
21. Chausad		3618	-	19	-	6
22. Kurrahi		3556	85	20	-	14
23. Pawaiya		2616	68	25	-	8
24. Oran Rural		2423	70	15	-	7
25. Singhpur		1708	39	16	-	5
Total Block Bisarda		20272	468	135	-	70
Total Tahsil Baberu		36842	919	323	-	130

Source : Data Collected from Tahsil Head quarter, Baberu.

APPENDIX II-6

Nyaya Panchayat Wise Surplus and Deficit of Agricultural Production, 1982 - 83.

(In Metric Tonnes)

Sl No	Crops	B A B E R U B L O C K								
		Nibhaur			Bhabhua			Karkuli Muafi		
	Crops	Production of crops	Consumption	Surplus/Deficit	Production of crops	Consumption	Surplus/Deficit	Production of crops	Consumption	Surplus/Deficit
1	2	3	4	5	6	7	8	9	10	11
1.	Rice	165	477.24	+312.24	610	388.80	+221.20	643	642.17	+0.83
2.	Wheat	1549	877.51	+671.49	1567	870.57	+696.43	2006	1177.46	+828.54
3.	Pulses	1447.21	300.48	+1146.73	1269.11	242.66	+1026.45	2907.15	403.85	+2503.30
4.	Oil Seeds	15	14.99	+ 0.41	13	16.81	- 3.81	29	23.11	+ 5.89
5.	Sugar Cane	35	43.51	- 8.51	74	36.30	+37.70	166	57.30	+108.70
6.	Potato	15	154.93	-139.93	29	125.82	-96.82	28	206.38	-178.38
7.	Barley	39	6.57	+32.43	12	8.70	+ 3.30	18	8.77	+ 9.23
8.	Jowar	1362	301.35	+1060.65	1158	244.36	+913.64	811	404.01	+406.99
9.	Millet	133	34.51	+ 98.49	123	27.38	+ 95.62	92	45.08	+46.92
10.	Maize	/	/	/	/	/	/	/	/	/
11.	Tobacco	0.43	0.55	-0.12	0.40	0.43	0.03	0.95	0.72	+ 0.13
12.	Play	5	2.10	+2.90	5	2.25	+2.75	10	2.85	+ 7.15
13.	Other crops	4	2.50	+1.50	3	1.20	+1.80	2	1.20	+ 0.80

XXXXII

Sl No	Nyaya Panchayat									
		Paras			Santar			Hardauli		
		Produ- ction of crops	Consu- mption	Surp- lus/ Defi- cit	Produ- ction of crops	Consu- mption	Surp- lus/ Defi- cit	Produ- ction of crops	Consu- mption	Surp- lus/ Defi- cit
1	2	12	13	14	15	16	17	18	19	20
1. Rice		360	325.97	+34.03	489	346.00	+143.00	712	742.17	-30.17
2. Wheat		1394	598.10	+795.90	1443	633.02	+809.98	1924	1363.61	+560.39
3. Pulses		967.11	205.80	+761.31	116310	214.76	+948.34	2206.21	466.83	+1739.29
4. Oil Seeds		9	11.28	-2.28	12	15.38	-3.38	21	29.20	-8.20
5. Sugar Cane		35	29.66	+ 5.34	32	30.39	+1.61	82	68.62	+13.38
6. Potato		16	104.92	-88.92	18	110.05	-92.05	30	240.21	-210.21
7. Barley		3	4.42	- 1.42	-	4.69	-4.69	-	10.15	-10.15
8. Jowar		674	205.40	+468.60	684	217.39	+466.61	956	468.28	+387.72
9. Millet		-	23.01	-23.01	-	23.92	-23.92	7	53.24	-46.24
10. Maize		/	/	/	/	/	/	/	/	/
11. Tobacco		-	0.36	-0.36	0.82	0.40	+0.42	0.09	0.83	0.74
12. Flay		4	2.31	+1.69	7	3.10	+3.90	10	5.27	+4.73
13. Other crops		1	0.80	+0.20	-	-	-	2	1.11	+0.89

XXXXIII

Sl No	Nyaya Pancha- yat Crops									
		Bagehta			Palhari			Badagaon		
		Produ- ction of crops	Consu- mption	Surplus /defi- cit	Produ- ction of crops	Consu- mption	Surp- lus/ defi- cit	Produ- ction of crops	Consu- mption	Surplus/ deficit
1	2	21	22	23	24	25	26	27	28	29
1. Rice	247	494.62	-247.62	634	570.05	+63.95	560	409.22	+150.78	
2. Wheat	1370	906.57	+463.43	1934	1050.63	+883.37	1241	749.48	+491.52	
3. Pulses	1424.11	311.77	+112.34	217600	359.42	+1316.3	177100	25729	+1313.71	
4. Oil Seeds	12	18.21	-6.21	19	24.02	-5.02	18	20.12	-2.12	
5. Sugar Cane	35	44.00	-9.00	41	53.05	-12.05	60	37.12	+22.88	
6. Potato	12	159.21	-147.21	30	185.13	-155.13	27	130.30	-103.30	
7. Barley	-	6.75	-6.75	-	7.81	-7.81	-	5.57	-5.57	
8. Jowar	785	311.68	+473.32	298	310.67	-12.67	391	257.24	+133.76	
9. Millet	26	35.01	-9.01	-	40.22	-40.22	-	28.58	-28.58	
10. Maize	-	-	-	-	-	-	-	-	-	
11. Tobacco	0.41	0.57	-0.16	-	0.65	-0.65	-	0.45	-0.45	
12. Flax	5	2.32	+2.68	6	2.91	+3.09	4	2.14	+1.86	
13. Other crops	1	1	-	-	-	-	-	-	-	

XXXXIV

Sl. No.	Crops	T o t a l		
		Production of crops	Consumption	Surplus/ deficit
1	2	30	31	32
1. Rice	4420	4396.24	+	23.76
2. Wheat	14428	8226.95	+	6201.05
3. Pulses	15331	2762.96	+	12568.04
4. Oil Seeds	148	172.72	-	24.72
5. Sugar Cane	560	399.95	+	160.05
6. Potato	205	1416.95	-	1211.95
7. Barley	72	63.43	+	8.57
8. Jowar	7019	2720.38	+	4298.62
9. Millet	381	310.95	+	70.05
10. Maize	-	-	-	-
11. Tobacco	3	4.87	-	1.87
12. Flax	56	25.25	+	30.75
13. Other crops	13	7.81	+	5.19

XXXXV

Sl No	K A M A S I N B L O C K									
	Nyaya Panchayat	Audaha			Bira			Narainpur		
		Crops	Pro- duction of crops	Consu- mption	Surp- lus/ Defi- cit	Pro- duction of crops	Consu- mption	Surp- lus/ Defi- cit	Pro- duction of crops	Consu- mption
1	2	33	34	35	36	37	38	39	40	41
1.Rice		69	512.95	-443.95	17	263.10	-246.30	351	392.61	- 41.61
2.Wheat		2007	1048.23	+958.77	808	537.04	+270.96	1140	812.31	+327.69
3.Pulses		2444.11	299.63	+2144.48	958.10	158.15	+799.95	1464.11	239.21	+1224.90
4.Oil Seeds		41.52	28.34	+13.18	20.00	12.81	+7.19	23.00	12.99	+10.01
5.Sugar Cane		-	14.51	-14.51	-	8.11	8.11	-	15.35	-15.35
6.Potato		-	40.36	-40.36	-	22.85	22.45	15	34.31	-19.31
7.Barley		31	8.41	+22.59	20	4.32	+15.68	23	6.28	+16.72
8.Jowar		979	296.16	+682.84	566	139.12	+426.88	580	229.33	+350.67
9.Millet		166	41.09	+124.91	92	22.02	+69.98	96	31.29	+64.71
10.Maize		-	-	-	-	-	-	-	-	-
11.Tobacco		-	0.58	-0.58	-	0.36	-0.36	-	0.41	-0.41
12.Flax		5	2.45	+2.55	3	2.01	+0.99	4	2.01	+1.99
13.Other crops		4	1.64	+2.36	3	1.21	+1.79	3	1.30	+1.70

XXXXVI

Sl/ No.										
	Nyaya Panchayat	Kamasin			Sunahuli			Parsauli		
	Crops	Produ- ction of crops	Consu- mption	Surp- lus/ Defi- cit	Produ- ction of crops	Consu- mption	Surp- lus/ Defi- cit	Produ- ction of crops	Consu- mption	Surp- lus/ Defi- cit
1	2	42	43	44	45	46	47	48	49	50
1. Rice	744	523.11	+220.99	73	252.43	-179.43	976	473.42	+402.58	
2. Wheat	1979	1068.12	+910.88	816	513.81	+302.19	1343	968.46	+374.54	
3. Pulses	2616.15	3150.4	+2301.11	962.19	148.11	+814.08	1967.12	276.54	+1690.58	
4. Oil Seeds	26.48	24.32	+ 2.16	14.00	12.13	+ 1.87	26.00	22.41	+ 3.59	
5. Sugar Cane	33	47.21	-14.21	-	8.27	-8.27	-	12.63	-12.63	
6. Potato	44	49.05	- 5.05	29	21.12	+7.88	28	39.82	-11.82	
7. Barley	34	10.11	+23.99	24	9.13	+14.87	9	3.86	+5.14	
8. Jowar	1165	311.68	+83.32	621	184.29	+436.71	869	276.16	+592.84	
9. Millet	202	38.69	+163.31	88	21.06	+66.94	162	38.07	+123.93	
10. Maize	-	-	-	-	-	-	-	-	-	
11. Tobacco	-	0.92	-0.92	-	0.32	-0.32	-	0.45	-0.45	
12. Flax	10	3.56	+6.44	3	1.71	+1.29	6	2.31	+ 3.69	
13. Other crops	4	1.29	+2.71	3	2.01	+0.99	2	1.10	+ 0.90	

XXXXVII

Sl No	Nyaya Panchayat	Sanda Sani			Chhilolar			Total		
	Crops	Produ- ction of crops	Consu- mption	Surp- lus/ Defi- cit	Produ- ction of crops	Consu- mption	Surp- lus/ Defi- cit	Produ- ction of crops	Consu- mption	Surp- lus/ Defi- cit
1	2	51	52	53	54	55	56	57	58	59
1. Rice	703	439.45	+263.55	843	362.27	+485.73	3691	3219.34	+461.66	
2. Wheat	1327	893.65	+433.35	995	740.62	+254.33	1045	6582.24	+392.76	
3. Pulses	1856.12	259.42	+1596.70	1426.10	213.16	+1207.94	13694	1914.26	+11779.74	
4. Oil Seeds	29.00	23.31	+ 5.69	25.00	21.20	+3.80	205	157.51	+ 47.49	
5. Sugar Cane	-	10.28	-10.28	-	20.18	-20.18	33	136.54	-103.54	
6. Potato	16	37.41	-21.41	29	31.89	- 2.99	161	276.41	-115.41	
7. Barley	8	5.58	+ 2.42	7	3.15	+3.85	156	50.84	+105.16	
8. Jowar	123	290.91	+432.09	601	212.89	+388.11	6104	1940.54	+416.46	
9. Millet	123	35.31	+37.69	107	30.60	+76.40	1036	258.13	+777.57	
10. Maize	-	-	-	-	-	-	-	-	-	
11. Tobacco	-	0.39	-0.39	-	0.54	-0.54	-	3.99	-3.99	
12. Flax	5	2.30	+2.70	6	2.15	+3.85	42	18.50	+23.50	
13. Other Crops	2	1.00	+1.00	2	0.90	+1.20	23	10.35	+12.65	

XXXXVIII

Sl. No.	B I S A N D A B L O C K									
	Nyaya Panchayat	Bhadehdu			Bisanda Rural			Chandrayal		
	Crops	Production of crops	Consumption	Surplus/Deficit	Production of crops	Consumption	Surplus/Deficit	Production of crops	Consumption	Surplus/Deficit
1	2	60	61	62	63	64	65	66	67	68
1. Rice	1537	430.90	+1106.10	2962	442.67	+2519.33	1542	420.10	+1121.90	
2. Wheat	1797	814.85	+982.15	3328	833.15	+2494.85	1867	790.41	+1076.59	
3. Pulses	591.78	237.18	+654.60	1658.77	212.08	+1416.69	987.78	230.70	+657.08	
4. Oil Seeds	9	22.12	-13.12	17.3	32.01	-14.71	8	19.51	-11.51	
5. Sugar Cane	100	56.11	+43.99	200	115.12	+84.58	130	70.20	+59.80	
6. Potato	44	122.72	-78.72	72	125.31	-53.31	45	120.30	-75.30	
7. Barley	2	2.15	-0.15	3	2.75	+0.25	2.00	2.47	-0.47	
8. Jowar	207	211.63	-4.63	391	217.90	+173.10	97	205.83	-108.83	
9. Millet	21	11.91	+9.09	23	12.10	+10.90	-	0.51	0.51	
10. Maize	-	-	-	-	-	-	-	-	-	
11. Tobacco	-	0.39	-0.39	0.54	0.41	+0.13	-	0.28	-0.28	
12. Flax	3	2.12	+0.88	4	2.50	+1.50	2	1.20	+0.80	
13. Other crops	1	1.10	-0.10	1	0.90	+0.10	1	0.80	+0.20	

XXXXIX

Sl. No.	Nyaya Panchayat	Chausad			Kurrahi			Pawaiya		
		Production of crops	Consumption	Surplus/Deficit	Production of crops	Consumption	Surplus/Deficit	Production of crops	Consumption	Surplus/Deficit
1	2	69	70	71	72	73	74	75	76	77
1. Rice		2307	629.46	+1677.54	1940	680.92	+1259.08	1564	445.86	+1118.14
2. Wheat		2711	1185.19	+1525.91	2307	1282.99	+1024.01	1935	843.18	+1091.82
3. Pulses		1342.79	344.30	+998.49	1225.78	373.21	+852.57	945.77	243.83	+699.94
4. Oil Seeds	12	20.28	-8.28		10	24.10	-14.10	8	12.05	-4.05
5. Sugar Cane	98	49.10	+43.90		65	39.15	+25.85	33	27.30	+5.70
6. Potato	28	175.5	+147.51		30	190.03	-160.03	29	122.18	-93.18
7. Barley	2	2.45	-0.45		2	3.21	-1.21	3	2.11	+0.99
8. Jowar	200	307.69	-107.69		301	335.41	-34.41	198	219.49	-21.49
9. Millet	-	0.42	-0.42		-	0.81	-0.81	66	39.62	+26.38
10. Maize	-	-	-		-	-	-	-	-	-
11. Tobacco	-	0.41	-0.41		-	0.43	-0.43	-	0.44	-0.44
12. Flax	2	0.99	+1.11		1	0.80	+0.20	1	0.70	+0.30
13. Other crops	1	0.76	+0.24		2	1.10	+0.90	1	0.85	+0.15

L

Sl No	Nyaya Panchayat	Oran Rural			Singhpur			Total		
		Produ- ction of crops	Consu- mption	Surp- lus/ Defi- cit	Produ- ction of crops	Consu- mption	Surp- lus/ Defi- cit	Produ- ction of crops	Consu- mption	Surp- lus/ Defi- cit
1	2	78	79	80	81	82	83	84	85	86
1.Rice	1809	432.56	+1376.44	996	473.45	+522.55	14657	3955.92	+10701.08	
2.Wheat	2132	819.10	+1312.90	1361	938.34	+467.66	17433	7462.21	+9975.79	
3.Pulses	1074.16	236.63	+937.53	1012.17	259.91	+752.26	9033	2167.84	+6869.16	
4.Oil Seeds	12.30	18.93	-6.63	11.4	29.04	-17.64	88	178.04	-90.04	
5.Sugar Cane	66	32.21	+33.79	65	80.10	-15.10	757	469.59	+287.41	
6.Potato	44	121.04	-77.04	30	128.05	-98.05	322	1105.14	-783.14	
7.Barley	8	6.21	+ 1.79	7	3.95	+ 3.05	29	25.30	+ 3.70	
8.Jowar	599	214.84	+384.05	501	232.06	+268.94	2184	1944.95	+549.05	
9.Millet	93	48.42	+44.58	151	81.58	+69.42	354	196.37	+157.63	
10.Maize	-	-	-	-	-	-	-	-	-	
11.Tobacco	0.46	0.52	-0.06	-	0.59	0.59	1	3.47	-2.47	
12.Flax	2	1.10	+0.90	3	1.50	+1.50	18	10.91	+7.19	
13.Other crops	2	1.05	+0.95	2	1.70	+0.30	11	8.26	+2.74	

LI

Sl. No.	Grand Total of Tahsil Baberu			
	Nyaya Panchayat	Production of crops	Consumption	Surplus/ Deficit
	Crops			
1	2	87	88	89
1. Rice		22758	11571.50	+11186.50
2. Wheat		42281	22271.40	+20009.60
3. Pulses		390.62	6885.06	+31216.94
4. Oil Seeds		441	508.27	- 67.27
5. Sugar Cane		1350	1006.08	+ 343.92
6. Potato		688	2798.50	- 2110.50
7. Barley		257	139.57	+ 117.43
8. Jowar		15617	6605.87	+ 9011.13
9. Millet		1771	765.45	+ 1005.55
10. Maize		-	-	-
11. Tobacco		4	12.33	- 8.33
12. Flax		116	54.56	+ 61.44
13. Other crops		47	26.42	+ 20.58

Source : Data collected from tahsil head quarter, Baberu.

LII
APPENDIX III-1
TRAFFIC FLOW : BABERU - BANDA ROAD

Time Interval	Cycle		Bus		Bullock-cart		Truck and tractor	
	F.	C.F.	F.	C.F.	F.	C.F.	F.	C.F.
1	2	3	4	5	6	7	8	9
6 - 9 a.m.	140	140	8	8	15	15	4	4
9 - 12	372	512	9	17	28	43	8	12
12 - 3 P.M.	132	644	11	28	6	49	5	17
3 - 6	185	829	8	36	14	63	6	23
6 - 9	121	950	6	42	6	69	7	30
9 - 12	8	958	-	42	-	69	3	33
12 - 3 a.m.	-	958	-	42	-	69	-	33
3 - 6	11	969	-	42	-	69	4	37
Total	969	-	42	-	69	-	37	-

APPENDIX III-2
TRAFFIC FLOW : BABERU - BISANDA ROAD

Time-Interval	Cycle		Bus		Bullock-cart		Truck and tractor	
	F.	C.F.	F.	C.F.	F.	C.F.	F.	C.F.
1	2	3	4	5	6	7	8	9
6 - 9 a.m.	48	48	2	2	10	10	2	2
9 -12	70	118	3	5	25	35	8	10
12 - 3 P.M.	54	172	3	8	18	53	5	15
3 - 6	42	214	2	10	22	75	7	22
6 - 9	22	236	1	11	14	89	2	24
9 -12	5	241	-	11	-	89	-	24
12 - 3 a.m.	-	241	-	11	-	89	-	24
3 - 6	6	247	-	11	1	90	3	27
Total	247		11		90		27	

LIII
APPENDIX III-3
TRAFFIC FLOW : BABERU - AUGASI ROAD

Time-Interval	Cycle		Bus		Bullock-cart		Truck and tractor	
	F.	C.F.	F.	C.F.	F.	C.F.	F.	C.F.
1	2	3	4	5	6	7	8	9
6- 9 a.m.	47	47	2	2	9	9	4	4
9-12	53	105	-	2	8	17	5	9
12- 3 P.M.	31	136	1	3	13	30	4	13
3- 6	39	175	1	4	13	43	5	13
6- 9	24	199	1	5	16	64	-	13
9-12	-	199	-	5	-	64	2	20
12- 3 a.m.	-	199	-	5	-	64	-	20
3- 6	10	209	-	5	5	69	-	20
Total	209	-	5	-	69	-	20	-

APPENDIX III-4
TRAFFIC FLOW : BABERU-MAHKA ROAD

Time-Interval	Cycle		Bus		Bullock cart		Truck and tractor	
	F.	C.F.	F.	C.F.	F.	C.F.	F.	C.F.
1	2	3	4	5	6	7	8	9
6- 9 a.m.	64	64	2	2	8	8	2	2
9-12	50	114	1	3	6	14	6	8
12- 3 P.M.	18	132	2	5	11	25	5	13
3- 6	39	170	1	6	13	43	3	16
6- 9	12	132	-	6	15	53	1	17
9-12	3	135	-	6	-	53	-	17
12- 3 a.m.	-	135	-	6	-	53	-	17
3- 6	17	202	-	6	7	65	-	17
Total	202	-	6	-	65	-	17	-

LIV
APPENDIX III-5
TRAFFIC FLOW : BISANDA-ATARRA ROAD

Time Interval	Cycle		Bus		Bullock cart		Truck and tractor	
	F.	C.F.	F.	C.F.	F.	C.F.	F.	C.F.
1	2	3	4	5	6	7	8	9
6- 9 a.m.	21	21	2	2	9	9	3	3
9-12	32	53	3	5	23	32	7	10
12- 3 P.M.	24	77	3	8	17	49	5	15
3- 6	28	105	2	10	18	67	6	21
6- 9	10	115	1	11	13	80	2	23
9-12	6	121	-	11	-	80	-	23
12-30 a.m.	-	121	-	11	-	80	-	23
3- 6	11	132	-	11	2	92	2	25
Total	132	-	11	-	82	-	25	-

APPENDIX III-6
TRAFFIC FLOW : BISANDA - BANDA ROAD

Time Interval	Bicycle		Bus		Bullock-cart		Truck and tractor	
	F.	C.F.	F.	C.F.	F.	C.F.	F.	C.F.
1	2	3	4	5	6	7	8	9
6- 9 a.m.	20	20	3	3	16	16	8	8
9-12	42	42	4	7	29	45	6	14
12- 3 P.M.	25	87	3	10	8	53	7	21
3- 6	27	114	3	13	19	72	6	27
6- 9	12	126	5	18	15	87	-	27
9-12	7	133	-	18	-	87	-	27
12- 3 a.m.	-	133	-	18	-	87	-	27
3- 6	10	143	-	18	-	87	5	32
Total	143	-	18	-	87	-	32	-

LV
APPENDIX III-7
TRAFFIC FLOW : BISAND- SINGPUR VIA ORAN ROAD

Time-Interval	Cycle		Bus		Bullock-cart		Truck and tractor	
	F.	C.F.	F.	C.F.	F.	C.F.	F.	C.F.
1	2	3	4	5	6	7	8	9
6- 9 a.m.	19	19	3	3	20	20	8	8
9-12	30	48	4	7	25	45	5	13
12- 3 P.M.	25	73	3	10	18	63	6	19
3- 6	11	84	3	13	12	75	4	23
6- 9	8	92	5	18	8	83	3	26
9-12	4	96	-	18	-	93	-	26
12- 3 a.m.	-	96	-	18	-	83	-	26
3- 6	12	108	-	18	5	88	-	26
Total	108	-	18	-	88	-	26	-

APPENDIX III-8
TRAFFIC FLOW : BABERU- KAMASIN ROAD

Time-Interval	Cycle		Bus		Bullock cart		Truck and tractor	
	F.	C.F.	F.	C.F.	F.	C.F.	F.	C.F.
1	2	3	4	5	6	7	8	9
6- 9 a.m.	15	15	4	4	11	11	2	2
9-12	30	45	5	9	18	29	4	6
12- 3 P.M.	25	70	6	15	16	45	3	9
3- 6	28	98	4	19	17	62	8	17
6- 9	14	112	2	21	10	72	4	21
9-12	-	112	-	21	-	72	2	23
12- 3 a.m.	-	112	-	21	-	72	-	23
3- 6	12	124	4	22	2	74	1	24
Total	124	-	22	-	74	-	24	-

LVI
APPENDIX III-9
TRAFFIC FLOW : BABERU - TINDWARI ROAD

Time-Interval	Cycle		Bus		Bullock cart		Truck and tractor	
	F.	C.F.	F.	C.F.	F.	C.F.	F.	C.F.
1	2	3	4	5	6	7	8	9
6- 9 a.m.	32	32	1	1	6	6	2	2
9-12	45	77	1	2	9	15	1	3
12- 3 P.M.	35	112	1	3	11	26	1	4
3- 6	29	141	1	4	8	34	2	6
6- 9	10	151	-	4	12	46	1	7
9-12	3	154	-	4	-	46	-	7
12- 3 a.m.	-	154	-	4	-	46	-	7
3- 6	18	172	-	4	-	46	-	7
Total	172	-	4	-	46	-	7	-

APPENDIX III-10
TRAFFIC FLOW : KAMASIN-DANDAU GHAT ROAD

Time-Interval	Cycle		Bus		Bullock-cart		Truck and tractor	
	F.	C.F.	F.	C.F.	F.	C.F.	F.	C.F.
1	2	3	4	5	6	7	8	9
6- 9 a.m.	20	20	1	1	2	2	1	1
9-12	44	64	1	2	7	9	1	2
12- 3 P.M.	22	86	1	3	6	15	1	3
3- 6	28	114	1	4	11	26	2	5
6- 9	18	132	-	4	4	30	-	5
9-12	2	134	-	4	-	30	-	5
12- 3 a.m.	-	-	-	4	2	30	-	5
3- 6	6	140	-	4	2	32	-	5
Total	140	-	4	-	32	-	5	-

Where, F. = Frequency

C.F. = Cumulative Frequency

LVII

APPENDIX III-11

Population Structure of Tahsil Baberu, 1981.

Sl. No.	Nyaya Panchayat	Total no. of residential house	Total no. of families	Total population			Schedule Caste			% of scheduled caste	Schedule Tribe caste		
				Male	Female	Total	Male	Female	Total		Male	Female	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Nibhaur		2136	2136	7075	6119	13194	1136	891	2027	15.36	-	-	-
2. Bhabua		1755	1755	5682	5017	10699	1367	1063	2430	22.71	-	-	-
3. Karhuli Muafi		2963	2963	9537	8152	17689	1737	1418	3155	17.83	-	-	-
4. Paras		1427	1435	4780	4213	8993	1367	1018	2385	26.52	-	-	-
5. Santar		1666	1691	5136	4382	9518	1521	1178	2699	28.35	-	-	-
6. Hardauli		3679	3754	11038	9465	20503	2855	2237	5092	24.83	-	-	-
7. Bagehta		2028	2295	7320	6326	13646	1742	1243	2985	21.87	-	-	-
8. Palhari		2743	2826	8549	7233	15782	2537	1904	4441	28.13	-	-	-
9. Badagaon		1881	1881	5978	5176	11254	1691	350	3041	27.02	-	-	-
Total Block Baberu		20278	20736	65095	56083	121278	15953	12302	28255	23.29	3	2	5
10. Audaha		2641	2651	8550	7426	15976	2140	1549	3689	23.09	-	-	-
11. Bira		1378	1393	4314	3871	8185	735	482	1217	14.86	-	-	-
12. Narainpur		2121	2130	6497	5731	12228	1653	1372	3025	24.66	-	-	-
13. Kamasin		2674	2698	8715	7549	16264	2831	2277	5108	31.40	-	-	-
14. Sunahuli		1344	1349	4142	3689	7831	52	46	98	1.25	-	-	-

LVIII

1	2	3	4	5	6	7	8	9	10	11	12	13	14
15. Parsauli	2505	2529	7860	6985	14745	2562	2035	4597	31.17	-	-	-	
16. Sanda Sani	2238	2295	7253	6367	13620	1924	1510	3434	25.21	-	-	-	
17. Chhilolar	1926	1947	6023	5260	11283	1175	896	2071	18.35	-	-	-	
Total Block Kamasin	16727	16892	53354	46778	100132	14064	10363	24927	24.89	-	-	-	
18. Bhadehdu	2212	2231	6426	5697	12123	2285	1859	4144	34.18	-	-	-	
19. Bisanda Rural	2022	2124	6648	5778	12426	1912	1537	3449	27.75	-	-	-	
20. Chandrayal	1969	2009	6326	5465	11791	1788	1399	3187	27.02	-	-	-	
21. Chausad	2708	2899	9472	8153	17625	3138	2508	5646	32.03	-	-	-	
22. Kurrahi	3900	3340	10354	8803	19157	2432	1907	5339	27.86	-	-	-	
23. Pawaiya	1972	2071	6665	5851	12516	2493	2055	4548	26.33	-	-	-	
24. Oran Rural	1889	2089	6582	5666	12198	2614	2181	4795	39.30	-	-	-	
25. Singhpur	2249	2269	7144	6149	13293	1730	1315	3045	22.90	-	-	-	
Total Block Bisanda	19321	19032	59567	51562	111129	1892	14761	33153	29.83	-	-	-	
26. Baberu T.A.	1723	1749	5335	4360	9695	1366	1185	2551	26.31	-	-	-	
27. Bisanda T.A.	1177	1332	3846	3352	7198	1073	944	2017	28.02	-	-	-	
28. Oran T.A.	793	795	2191	1956	4147	533	496	1029	24.81	-	-	-	
Total Tahsil Baberu	49019	60536	199408	164091	353579	51381	40552	91933	26.00	3	2	5	

Source : State Census Office Uttar Pradesh, Lucknow.

LIX

APPENDIX III-12

Decennial Growth of Population in Tahsil Baberu, 1971-81.

Sl No.	Nyaya Panchayat	Population 1971			Population 1981			Growth 1971-81 in %		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1	2	3	4	5	6	7	8	9	10	11
1.	Nibhour	5637	4634	10371	7075	6119	13194	25.51	32.04	27.22
2.	Bhabhua	4443	3854	8297	5682	5017	10699	27.88	30.17	28.92
3.	Karhulia Muafi	7401	6156	13557	9537	8152	17689	28.86	32.42	30.48
4.	Paras	3749	3375	7124	4780	4213	8993	27.50	24.82	26.24
5.	Santar	4190	3765	7955	5136	4382	9518	22.57	16.38	19.65
6.	Hardauli	7844	6907	14751	11038	9465	20503	40.71	37.03	39.02
7.	Bagehta	5719	5089	10808	7320	6326	13646	27.99	24.30	26.26
8.	Palhari	6858	6042	12800	8549	7233	15782	24.65	19.71	23.30
9.	Badagaon	4804	4105	8909	5978	5276	11254	24.43	28.52	26.32
Total Block Baberu		50645	43927	94572	65095	56083	121278	28.53	27.67	28.24
10.	Audaha	6914	6148	13061	8550	7426	15976	23.66	20.78	22.32
11.	Bira	3442	3050	6492	4314	3871	8185	25.33	26.91	26.05
12.	Narainpur	5144	4511	9655	6497	5731	12228	26.30	27.04	26.65
13.	Kamasin	7310	6329	13639	8715	7549	16264	19.22	19.27	19.25
14.	Sunahuli	3321	2946	6267	4142	3689	7831	24.72	25.22	24.97
15.	Parsauli	6345	5661	12006	7860	6885	14745	23.87	21.62	22.82
16.	Sanda-Sani	5782	5112	10894	7253	6367	13620	25.44	24.55	25.03

LX										
1	2	3	4	5	6	7	8	9	10	11
17.Chhilolar	4417	4006	8423	6023	5260	11288	36.35	31.30	33.96	
Total Block Kamasin	42675	37763	80438	53354	46778	100132	25.02	23.87	24.48	
18.Bhadehdu	5285	4342	9627	6426	5697	12123	21.58	31.20	25.96	
19.Bisanda Rural	7931	7032	14963	6648	5778	12426	16.17	17.83	16.96	
20.Chandrayal	5299	4624	9923	6326	5465	11791	19.38	18.18	18.83	
21.Chausad	7553	6673	14226	9472	8153	17625	25.40	22.17	23.99	
22.Kurrahi	7567	6904	14471	10354	8903	19157	36.83	27.50	32.38	
23.Pawaiya	5392	4815	10207	6665	5851	12516	23.60	21.51	22.62	
24.Oran Rural	6740	5982	12722	6582	5666	12198	2.34	5.28	4.12	
25.Singhpur	5588	4830	10418	7144	6149	13293	27.84	27.30	27.60	
Total Block Bisanda	51355	45202	96557	59517	51562	111129	16.08	14.07	15.09	
26.Baberu T.A.	4461	3294	7755	5335	4360	9695	19.59	32.36	25.01	
27.Bisanda T.A.	-	-	-	3946	3352	7198	-	-	-	
28.Oran T.A.	-	-	-	2191	1956	4147	-	-	-	
Total Tahsil Baberu	149136	130186	279322	189408	164091	353579	27.00	26.04	26.58	

Source : Calculated from the data collected from the state census office U.P., Lucknow.

LXI

APPENDIX III-13

Density of Population in Tahsil Baberu, 1981.

Sl. No.	Nyaya Panchayat/ T.A.	Geographical area in Km ²	Total population	Density persons/ Km ²
1	2	3	4	5
1.	Nibhaur	70.62	13194	196
2.	Bhabhua	46.30	10699	231
3.	Karhuli Muafi	94.79	17689	186
4.	Paras	38.47	8993	233
5.	Santar	39.54	9518	240
6.	Hardauli	91.23	20503	224
7.	Bagehta	61.25	13646	222
8.	Palhari	82.87	15782	190
9.	Badagaon	58.64	11254	191
Total Block Baberu		583.70	121278	207
10.	Audaha	96.17	15976	166
11.	Bira	46.76	8185	175
12.	Narainpur	65.99	12228	185
13.	Kamasin	96.12	16264	169
14.	Sunahuli	42.41	7831	184
15.	Parsauli	64.11	14745	229
16.	Sanda-Sani	64.66	13620	210
17.	Chhilolar	52.63	11283	214
Total Block Kamasin		528.86	100132	189

LXII

1	2	3	4	5
18. Bhadehdu		44.65	12123	271
19. Bisanda Rural		94.93	12426	146
20. Chandrayal		46.79	11791	251
21. Chausad		64.92	17625	271
22. Kurrahī		57.61	19157	332
23. Pawaiya		47.32	12516	264
24. Oran Rural		55.93	12198	218
25. Singhput		73.01	13293	182
Total Block Bisanda		475.06	111129	233
26. Baberu T.A.		00.91	96.45	11907
27. Bisanda T.A.		00.36	7198	19994
28. Oran T.A.		00.30	4147	13823
Total Tahsil Baberu		1589.09	353579	222

Source : Computed from the data collected from the state census office, U.P. Lucknow.

LXIII

APPENDIX III-14

Occupational Structure of Tahsil Baberu, 1981.

Sl. No.	Nyaya Panchayat	Total population			Working population			%
		Male	Female	Total	Male	Female	Total	
1	2	3	4	5	6	7	8	9
1.	Nibhaur	7075	6119	13194	3639	407	4046	30.66
2.	Bhabhua	5682	5017	10699	2719	701	3419	31.96
3.	Karhuli Muafi	9537	8152	17689	4998	926	5914	33.44
4.	Paras	4780	4213	8993	2217	247	2464	27.40
5.	Santar	5136	4382	9518	2654	548	3202	30.46
6.	Hardauli	11038	9465	20503	5459	884	6343	30.94
7.	Bagehta	7320	6326	13646	3370	264	3634	26.63
8.	Palhari	8549	7233	15782	4165	729	4894	31.01
9.	Badagaon	5978	5176	11254	2877	362	3239	28.78
10.	Total Block Baberu	65095	56083	121278	32086	4769	36855	30.39
10.	Audaha	8550	7426	15976	4485	935	5420	33.93
11.	Bira	4314	3871	8185	2377	658	3035	37.08
12.	Narainpur	6497	5731	12228	3410	567	3977	32.52
13.	Kamasin	9715	7549	16264	4779	1357	6136	37.72
14.	Sunahuli	4142	3689	7831	2084	333	2417	30.86
15.	Parsauli	7860	6885	14745	4103	749	4852	32.91
16.	Sanda-Sani	7253	6367	13620	3683	292	3975	29.19

LXIV

Sl. No.	Nyaya Panchayat	Agriculturists (Kashtkar)				Agricultural labours (Khetihar majdoor)			
		Male	Female	Total	%	Male	Female	Total	%
1	2	10	11	12	13	14	15	16	17
1.	Nibhaur	2905	154	2959	73.13	712	246	958	23.68
2.	Bhabhua	1756	297	2053	60.05	711	364	1075	31.44
3.	Karhuli Muafi	3130	403	3533	59.83	558	505	2063	34.88
4.	Paras	1571	48	1619	65.70	519	136	705	28.61
5.	Santar	1915	240	2155	70.81	608	272	880	30.32
6.	Hardauli	3067	359	3426	54.02	1372	466	1838	28.97
7.	Bagehta	2221	85	2306	63.46	899	161	1050	28.89
8.	Palhari	2546	311	2857	58.38	1163	404	1567	32.02
9.	Badagaon	1754	321	2075	64.06	867	40	907	28.02
Total Block Baberu		20765	1922	22687	61.56	8399	2644	11043	29.96
10.	Adaha	2908	380	3288	60.66	1295	527	1822	33.62
11.	Bira	1983	362	2345	77.26	308	267	575	18.75
12.	Narainpur	2428	226	2654	66.73	785	326	1111	27.94
13.	Kamasin	3172	726	3898	63.53	1228	609	1837	29.94
14.	Sunahuli	1514	167	1681	69.55	356	147	503	20.81
15.	Parsauli	2921	355	3276	67.52	943	387	1330	27.41
16.	Sanda Sani	2862	138	3000	75.47	604	141	745	18.74

LXV

Sl. No.	Nyaya Panchayat	Family, Industry, Production Resource, Servicing and Repairs.				Other workers			
		Male	Female	Total	%	Male	Female	Total	%
1	2	18	19	20	21	22	23	24	25
1. Nibhaur		23	3	26	0.64	99	4	103	2.55
2. Bhabhua		71	30	101	2.95	180	10	190	5.56
3. Karhuli M-Muafi		85	6	91	1.54	215	7	222	3.75
4. Paras		46	12	58	2.35	81	3	84	3.41
5. Santar		52	19	71	2.45	79	17	96	3.31
6. Hardauli		121	17	138	2.17	899	42	941	14.84
7. Bagehta		67	6	73	2.25	193	12	205	5.64
8. Palhari		132	9	141	2.88	324	5	329	6.72
9. Badagaon		94	-	94	2.90	183	1	184	5.68
Total Block Baberu		670	102	772	2.09	2253	101	2354	6.39
10. Audaha		71	11	82	1.51	211	17	228	4.21
11. Bira		32	1	33	1.08	54	28	82	2.71
12. Nareainpur		83	9	92	2.32	114	6	120	3.01
13. Kamasin		78	7	85	1.38	301	15	316	5.15
14. Sunahuli		68	12	80	3.31	146	7	153	6.33
15. Parsauli		80	4	84	1.73	159	3	162	3.34
16. Sanda-Sani		85	12	97	2.44	132	1	133	3.55

LXVI

1	2	3	4	5	6	7	8	9
17. Chhilolar		6023	5260	11293	3015	155	3170	28.09
Total Block Kamasin		53354	46778	100132	27936	5046	32982	32.94
18. Bhadehdu		6426	5697	12123	3343	486	3829	31.58
19. Bisanda Rural		6648	5778	12426	3254	545	3799	30.57
20. Chandrayal		6326	5465	11791	3345	499	3844	32.60
21. Chausad		9472	8153	17625	4941	1066	6007	34.08
22. Kurrahi		10354	8803	19157	5559	677	6236	32.55
23. Pawaiya		6665	5851	12516	3697	685	4382	35.02
24. Oran Rural		6582	5666	12198	3545	476	4021	32.98
25. Singhpur		7144	6149	13293	4002	1215	5217	39.25
Total Block Bisanda		59567	51562	111129	31686	5651	37337	33.60
26. Baberu T.A.		5335	4360	9695	2482	369	2851	29.41
27. Bisanda T.A.		3846	3352	7198	1966	140	2106	29.26
28. Oran T.A.		2191	1956	4147	1179	65	1244	30.00
Total Tahsil Baberu		189488	164091	353579	97335	16040	113375	32.06

LXVII

1	2	10	11	12	13	14	15	16	17
17.Chhilolar		2581	67	2648	83.54	294	80	374	11.79
Total Block Kamasin		20369	2421	22790	69.10	5813	2484	8297	25.16
18.Bhadehdu		1908	299	2207	57.64	1091	182	1273	33.25
19.Bisanda Rural		2021	161	2182	57.44	1064	382	1446	38.05
20.Chandrayal		2064	254	2318	60.30	1112	241	1353	35.20
21.Chausad		2968	343	3311	55.12	1686	693	2379	39.60
22.Kurrahi		3942	146	4088	65.56	1259	403	1662	26.63
23.Pawaiya		2606	242	2848	64.99	927	433	1360	31.04
24.Oran Rural		2718	271	2989	74.30	667	191	858	21.33
25.Singhpur		2729	393	3112	59.65	1046	811	1857	35.59
Total Block Bisanda		20966	2099	23065	61.77	9852	3336	12188	32.64
26.Baberu T.A.		878	102	980	34.37	441	184	625	21.92
27.Bisanda T.A.		807	12	819	38.99	615	105	720	34.19
28.Oran T.A.		796	15	811	65.19	186	36	222	17.84
Total Tahsil Baberu		64581	6571	71152	62.76	24306	8789	33095	29.19

LXVIII

1	2	18	19	20	21	22	23	24	25
17.Chhilolar	50	8	58	1.83	90	-	90	2.84	
Total Block Kamasin	547	64	611	1.85	1207	77	1284	3.89	
18.Bhadehdu	63	1	64	1.67	281	4	285	7.44	
19.Bisanda Rural	47	2	49	1.27	112	-	112	2.94	
20.Chandrayal	62	1	63	1.64	107	3	110	2.86	
21.Chaused	103	12	115	1.92	184	18	202	2.36	
22.Kurrahi	151	20	171	2.74	207	108	315	5.05	
23.Pawaiya	70	6	76	1.73	94	4	98	2.24	
24.Oran Rural	60	8	68	1.69	100	6	106	2.68	
25.Singhpur	91	15	96	1.84	146	6	152	2.92	
Total Block Bisanda	637	65	702	1.88	1231	151	1382	3.71	
26.Baberu T.A.	91	18	109	3.83	1072	65	1137	39.88	
27.Bisanda T.A.	117	7	124	5.88	427	16	443	21.04	
28.Oran T.A.	14	-	14	1.13	182	15	197	15.84	
Total Tahsil Baberu	2076	256	2332	2.06	6371	425	6796	5.99	

Source : Computed from the data collected from the state census office U.P., Lucknow.

LXIX

APPENDIX III-15

Percentage of Working, Non Working and Marginal Working Force in
Tahsil Baberu , 1951

Sl. No.	Nyaya Panchayat	Total Population			Workers			
		Male	Female	Total	Male	Female	Total	% of Total population
1	2	3	4	5	6	7	8	9
1.	Nibheur	7075	6119	13194	3639	407	4046	30.66
2.	Bhabhua	5682	5017	10699	2718	701	3419	31.96
3.	Karhuli	9537	8152	17689	4988	926	5914	33.44
4.	Paras	4780	4213	8993	2217	247	2464	27.40
5.	Santar	5136	4382	9518	2654	548	3202	30.46
6.	Hardauli	11038	9465	20503	5459	884	6343	30.94
7.	Bagehta	7320	6326	13646	3370	264	3634	26.63
8.	Palhari	8549	7233	15782	4165	729	4894	31.01
9.	Badagaon	5978	5176	11254	2877	362	3239	28.78
Total Block Baberu		65095	56083	121278	32086	4769	36855	30.39
10.	Audaha	8550	7426	15976	4485	935	5420	33.93
11.	Bira	4314	3871	8185	2377	658	3035	37.08
12.	Nerainpur	6497	5731	12228	3410	567	3977	32.52
13.	Kemasin	8715	7549	16264	4779	1357	6136	37.72
14.	Sunahuli	4142	3689	7831	2084	333	2417	30.86
15.	Parsauli	7860	6885	14745	4103	749	4852	32.91
16.	Sanda-Sani	7293	6367	13620	3683	292	3975	29.19

LXIX

APPENDIX III-15

Percentage of Working, Non Working and Marginal Working Force in
Tahsil Baberu , 1981

Sl. No.	Nyaya Panchayat	Total Population			Workers			
		Male	Female	Total	Male	Female	Total	% of Total population
1	2	3	4	5	6	7	8	9
1.	Nibhaur	7075	6119	13194	3639	407	4046	30.66
2.	Bhabhua	5682	5017	10699	2718	701	3419	31.96
3.	Karhuli	9537	8152	17689	4988	926	5914	33.44
4.	Paras	4780	4213	8993	2217	247	2464	27.40
5.	Santar	5136	4382	9518	2654	548	3202	30.46
6.	Hardauli	11038	9465	20503	5459	884	6343	30.94
7.	Bagehta	7320	6326	13646	3370	264	3634	26.63
8.	Palhari	8549	7233	15782	4165	729	4894	31.01
9.	Badagaon	5978	5176	11254	2877	362	3239	28.78
Total Block Baberu		65095	56083	121278	32086	4769	36855	30.39
10.	Audaha	8550	7426	15976	4485	935	5420	33.93
11.	Bira	4314	3871	8185	2377	658	3035	37.08
12.	Narainpur	6497	5731	12228	3410	567	3977	32.52
13.	Kamasin	8715	7549	16264	4779	1357	6136	37.72
14.	Sunahuli	4142	3689	7831	2084	333	2417	30.86
15.	Parsauli	7860	6885	14745	4103	749	4852	32.91
16.	Sanda-Sani	7253	6367	13620	3683	292	3975	29.19

Sl No	Nyaya Panchayat	Non- Workers				Marginal Workers			
		Male	Female	Total	% of total population	Male	Female	Total	% of total population
1	2	10	11	12	13	14	15	16	17
1.Nibhaur		3399	5125	8524	64.61	37	597	624	4.73
2.Bhabhua		2940	3992	6932	64.79	24	324	348	3.25
3.Karhuli		4539	7151	11690	66.08	10	75	85	0.48
4.Paras		2778	3574	6352	70.63	85	392	477	5.30
5.Santar		2481	3680	6161	64.73	1	154	155	1.61
6.Hardauli		5519	7731	13250	64.63	60	850	910	4.43
7.Bagehta		3789	5096	8885	65.12	161	966	1127	8.25
8.Palhari		4215	4761	8976	56.97	159	1773	1912	12.12
9.Badagaon		2820	4332	7152	63.55	82	781	863	7.67
Total Block Baberu		32480	45442	77932	64.25	629	5872	6501	5.36
10.Audaha		3913	5851	9764	61.11	152	640	792	4.96
11.Bira		1921	2962	4883	59.66	16	251	267	3.26
12.Narainpur		3041	4655	7696	62.94	46	509	555	4.54
13.Kamasin		3795	5625	9420	57.92	141	567	708	4.36
14.Sunahuli		1986	2954	4940	61.81	72	502	574	7.33
15.Parsauli		3718	5742	9460	64.16	39	394	433	2.93
16.Sanda Sani		3457	5299	8756	64.28	113	776	889	6.53

1	2	3	4	5	6	7	8	9
17. Chhilolar	6023	5260	11293	3015	155	3170	28.09	
Total Block Kamasin	53354	46779	100132	27936	5046	32092	32.94	
18. Bhadehdu	6426	5697	12123	3343	486	3829	31.58	
19. Bisanda Rural	6648	5778	12426	3254	545	3799	30.57	
20. Chandrayal	6326	5465	11791	3345	499	3844	32.60	
21. Chausad	9472	8153	17625	4941	1066	6007	34.08	
22. Kurrahi	10354	8903	19157	5559	677	6236	32.55	
23. Pawaiya	6665	5851	12516	3697	685	4382	35.02	
24. Oran Rural	6582	5666	12198	3545	478	4023	32.98	
25. Singhpur	7144	6149	13293	4002	1215	5217	39.25	
Total Block Bisanda	59567	51562	111129	31686	5651	37337	33.60	
26. Baberu T.A.	5335	4360	9695	2482	369	2851	29.41	
27. Bisanda T.A.	3846	3352	7298	1966	140	2106	29.26	
28. Oran T.A.	2191	1956	4147	1179	65	1244	30.00	
Total Tahsil Baberu	189488	164091	353579	97335	16040	113375	32.06	

LXXII

1	2	10	11	12	13	14	15	16	17
17. Chhilolar	2846	3549	6395	56.68	162	1556	1718	15.23	
Total Block Kamasin	24677	36537	64415	64.33	741	5195	5936	5.93	
18. Bhadehdu	2967	3764	6731	55.53	116	1447	1563	12.89	
19. Bisanda Rural	3194	4036	7230	58.18	200	1197	1397	11.25	
20. Chandrayal	2905	4519	7424	62.96	76	447	523	4.44	
21. Chausad	4375	6182	10557	59.90	156	905	1061	6.02	
22. Kurrahi	4724	7289	12012	62.71	71	838	909	4.74	
23. Pawaiya	2831	3634	6465	51.65	137	1532	1669	13.33	
24. Oran Rural	2859	3656	6515	53.41	128	1532	1660	13.61	
25. Singhpur	3103	4378	7481	56.28	39	556	595	4.47	
Total Block Bisanda	26958	37457	64415	57.96	923	8454	9377	8.44	
26. Baberu T.A.	2829	3841	6670	68.80	24	150	174	1.79	
27. Bisanda T.A.	1852	2900	4752	61.01	28	312	340	4.73	
28. Oran T.A.	1003	1534	2537	61.17	9	357	366	8.83	
Total Tahsil Baberu	89799	127711	217510	61.52	2354	20340	22694	6.42	

Source : Computed from the data collected from the state census office,
U.P., Lucknow.

LXXIII

APPENDIX III-16

Literate and Illiterate Population in Tahsil Baberu, 1931

Sl. No.	Nyaya Panchayat	Total Population			Literary					
		Male	Female	Total	Male	% of total population	Female	% of total population	Total	% of total population
1	2	3	4	5	6	7	8	9	10	11
1.	Nibhaur	7075	6119	13194	2658	16.36	199	1.50	2357	17.86
2.	Bhabhua	5692	5017	10699	2109	19.71	342	3.19	2451	22.90
3.	Karhuli	9537	8152	17689	3005	16.98	366	2.07	3371	19.05
4.	Paras	4780	4213	8993	2004	22.28	322	3.58	2326	25.86
5.	Santar	5136	4382	9518	1880	19.75	176	1.85	2056	21.60
6.	Hardauli	11038	9465	20503	3963	19.33	710	3.46	4673	22.79
7.	Bagehta	7320	6326	13646	2236	16.38	255	1.87	2491	18.25
8.	Palhari	8549	7233	15782	3130	19.83	353	2.24	3483	22.07
9.	Badagaon	5978	5176	11254	2213	19.84	109	0.98	2322	20.82
10.	Total Block Baberu	65095	56083	121278	22698	18.73	2932	2.34	25530	21.07
10.	Audaha	8550	7426	15976	2296	14.37	429	2.68	2725	17.05
11.	Bira	4314	3871	8185	1314	16.06	128	1.56	1442	17.62
12.	Narainpur	6497	5731	12228	1739	14.23	169	1.38	1908	15.61
13.	Kamasin	8715	7549	16264	2969	18.26	467	2.86	3436	21.12
14.	Sunahuli	4142	3689	7831	1487	18.99	239	3.05	1726	22.04
15.	Parsauli	7860	6885	14745	3286	22.28	498	3.38	3784	25.66

LXXIV

Sl. No.	Nyaya Panchayat	Illiterary					
		Male	% of total population	Female	% of total population	Total	% of total population
1	2	12	13	14	15	16	17
1.	Nibhaur	4917	37.27	5920	44.97	10837	82.14
2.	Bhabhua	3573	33.40	4675	43.70	8248	77.10
3.	Karhuli	6532	36.92	7796	44.03	14318	80.95
4.	Paras	2776	30.87	3991	43.27	6667	74.14
5.	Santar	3256	34.21	4206	44.19	7462	78.40
6.	Hardauli	7075	34.51	8755	42.70	15830	77.21
7.	Bagenta	5084	37.26	6071	44.49	11155	81.75
8.	Palhari	5419	34.33	6890	43.60	12299	77.93
9.	Badagaon	3765	33.75	5167	45.43	8932	79.18
Total Block Baberu		42397	34.98	53251	43.95	95648	78.93
10.	Audaha	6254	39.15	6997	43.80	13251	82.95
11.	Bira	3000	36.65	3743	45.73	6743	82.38
12.	Narainpur	4758	38.91	5562	45.48	10320	84.39
13.	Kamasin	5746	35.33	7082	43.55	12828	78.98
14.	Sunahuli	2655	33.90	3450	44.06	6105	77.96
15.	B Parsauli	4574	31.02	6387	43.32	10961	74.34

LXXV

1	2	3	4	5	6	7	8	9	10
16. Sanda Sani	7253	6367	13620	2384	17.50	264	1.94	2648	19.44
17. Chhilolar	6023	5260	11283	1580	14.00	132	1.17	1712	15.17
18. Total Block Kamasin	53354	46778	100132	17055	17.03	2326	2.32	19381	19.35
18. Bhadehdu	6426	5697	12123	2133	17.59	172	1.42	2305	19.01
19. Bisanda Rural	6648	5778	12426	2481	19.97	243	1.95	2724	21.92
20. Chandrayal	6326	5465	11791	1711	14.52	211	1.78	1922	16.30
21. Chausad	9472	8153	17625	2865	16.26	348	1.97	3213	18.23
22. Kurrahi	10354	8803	19157	2696	14.07	308	1.60	3004	15.68
23. Pawaiya	6665	5851	12516	1807	14.44	186	1.48	1993	15.92
24. Oran Rural	6582	5666	12198	1620	13.28	127	1.04	1747	14.32
25. Singhpur	7144	6149	13293	2276	17.12	213	1.60	2489	18.72
Total Block Bisanda	59567	51562	111129	17589	15.83	1808	1.62	19397	17.45
26. Baberu T.A.	5335	4360	9695	2774	23.61	881	9.08	3655	37.69
27. Bisanda T.A.	3846	3352	7198	1646	22.86	476	6.61	2122	29.48
28. Oran T.A.	2191	1956	4147	754	18.18	159	3.83	913	22.01
29. Total Tahsil Baberu	19488	164091	353579	62516	17.68	8482	2.40	70998	20.08

LXXV

1	2	3	4	5	6	7	8	9	10
16. Sanda Sani	7253	6367	13620	2394	17.50	264	1.94	2648	19.44
17. Chhilolar	6023	5260	11293	1580	14.00	132	1.17	1712	15.17
18. Total Block Kamasin	53354	46778	100132	17055	17.03	2326	2.32	19381	19.35
18. Bhadehdu	6426	5697	12123	2133	17.59	172	1.42	2305	19.01
19. Bisanda Rural	6648	5778	12426	2481	19.97	243	1.95	2724	21.92
20. Chandrayal	6326	5465	11791	1711	14.52	211	1.78	1922	16.30
21. Chausad	9472	8153	17625	2865	16.26	348	1.97	3213	18.23
22. Kurrahi	10354	8903	19157	2696	14.07	308	1.60	3004	15.68
23. Pawaiya	6665	5851	12516	1807	14.44	186	1.48	1993	15.92
24. Oran Rural	6582	5666	12198	1620	13.28	127	1.04	1747	14.32
25. Singhpur	7144	6149	13293	2276	17.12	213	1.60	2489	18.72
Total Block Bisanda	59567	51562	111129	17599	15.83	1808	1.62	19397	17.45
26. Baberu T.A.	5335	4360	9695	2774	23.61	881	9.08	3655	37.69
27. Bisanda T.A.	3946	3352	7198	1646	22.86	476	6.61	2122	29.48
28. Oran T.A.	2191	1956	4147	754	18.18	159	3.83	913	22.01
29. Total Tahsil Baberu	119488	104091	253579	62516	17.68	1516	2.40	70998	20.08

1	2	11	12	13	14	15	16	17
16. Sanda Sani	19.44	4869	35.75	6103	44.91	10972	80.56	
17. Chhilolar	15.17	4443	39.38	5123	45.45	9571	84.83	
Total Block Kamasin	19.35	36299	36.25	44452	44.40	80751	80.65	
18. Bhadehdu	19.01	4293	35.42	5525	45.57	9913	80.99	
19. Bisanda Rural	21.92	4167	33.54	5535	44.54	9702	79.08	
20. Chandrayal	16.30	4615	39.14	5254	44.56	9869	83.70	
21. Chausad	18.23	6607	37.49	7305	44.28	14412	81.77	
22. Kurrahi	15.68	7658	39.97	9495	44.35	16153	84.32	
23. Pawaiya	15.92	4858	38.82	5665	45.26	10523	84.08	
24. Oran Rural	14.32	4962	40.67	5539	45.01	10451	85.68	
25. Singhpur	18.72	4868	36.62	5936	44.66	10804	81.28	
26. Total Block Bisanda	17.45	41978	37.78	49754	44.77	91732	82.55	
26. Baberu T.A.	37.69	2561	26.42	3479	35.89	6040	62.31	
27. Bisanda T.A.	29.48	2200	30.56	2876	39.96	5076	70.52	
28. Oran T.A.	22.01	1437	34.65	1797	43.34	3234	77.99	
Total Tahsil Baberu	20.08	126972	35.91	155609	44.01	282581	79.92	

Source : Computed from the data collected from the state census office,
U.P., Lucknow.

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APPENDIX III-17

Nyaya Panchayatwise Percentage and Growth of Literacy in Tahsil
Baberu, 1971-81.

Sl. No.	Nyaya Panchayat	Literacy 1971			Literacy 1981			
		Male	Female	Total	Male	Female	Total	% of total population
1	2	3	4	5	6	7	8	9
1.	Nibhaur	1514	154	1668	2158	199	2357	17.96
2.	Bhabhua	1330	175	1505	2109	342	2451	22.90
3.	Karhuli Muafi	1850	187	2037	3005	366	3371	19.05
4.	Paras	1005	123	1128	2004	322	2326	25.86
5.	Santar	1214	169	1383	1880	176	2056	21.60
6.	Hardauli	2268	267	2535	3963	710	4673	22.79
7.	Bagenta	1358	164	1522	2236	255	2491	18.25
8.	Palhari	1862	161	2023	3130	353	3483	22.06
9.	Badagaon	1281	99	1380	2213	109	2322	20.81
Total Block Baberu		13682	1499	15181	22698	2832	25530	21.06
10.	Audaha	1714	172	1886	2296	429	2725	17.05
11.	Bira	908	75	983	1314	128	1442	17.61
12.	Narainpur	1163	67	1230	1739	169	1908	15.60
13.	Kamasin	2073	312	2385	2969	469	3436	21.12
14.	Sunahuli	963	132	1095	1487	239	1726	22.04
15.	Parsauli	1809	211	2020	3286	498	3784	25.66

LXXVIII

Sl. No.	Nyaya Panchayat	Literacy Growth 1971-81			
		Male	Female	Total	Growth in %
1	2	10	11	12	13
1.	Nibheur	644	45	689	41.30
2.	Bhabhua	779	167	946	62.85
3.	Karhuli Muafi	1155	179	1334	65.48
4.	Paras	999	199	1198	106.20
5.	Santar	666	7	673	48.66
6.	Hardauli	1695	443	2138	84.33
7.	Bagenta	878	91	969	63.66
8.	Palhari	1268	192	1460	72.17
9.	Badagaon	932	10	942	68.26
Total Block Baberu		9016	1333	10349	68.17
10.	Audaha	582	257	839	44.48
11.	Bira	406	53	459	46.69
12.	Narainpur	576	102	678	55.12
13.	Kamasin	896	155	1051	44.06
14.	Sunahuli	524	107	631	57.62
15.	Parseauli	1477	287	1764	87.32

LXXIX

1	2	3	4	5	6	7	8	9
16. Sandad Sani	1664	156	1820	3384	264	2648	19.44	
17. Chhilolar	965	89	1054	1580	132	1712	15.17	
18. Total Block Kamasin	11259	1214	12473	17055	2326	19381	19.35	
18. Bhadehdu	1698	98	1796	2133	172	2305	19.01	
19. Bisanda Rural	2557	333	2890	2481	243	2724	21.92	
20. Chandrayal	1387	148	1535	1711	211	1922	16.30	
21. Chausad	1909	176	2085	2865	348	3213	18.22	
22. Kurrahi	1890	128	2018	2696	308	3004	15.68	
23. Pawaiya	1405	112	1517	1807	186	1993	15.92	
24. Oran Rural	1379	202	1581	1620	127	1747	14.32	
25. Singhpur	1316	103	1419	2276	213	2489	18.72	
Total Block Bisanda	13541	1300	14841	17589	1808	19397	17.448	
26. Baberu T.A.	2069	510	2579	2774	881	3655	37.69	
27. Bisanda T.A.	-	-	-	1646	476	2122	29.48	
28. Oran T.A.	-	-	-	754	159	913	22.01	
Total Tahsil Baberu	40551	4523	45074	62516	8482	70998	20.07	

LXXX

1	2	10	11	12	13
16. Sanda Sani		1720	108	1828	100.43
17. Chhilolar		615	43	658	62.42
Total Block Kamasin		5796	1112	6908	55.38
18. Bhadehdu		435	74	509	28.34
19. Bisanda Rural		- 76	-90	- 166	- 5.74
20. Chandrayal		324	63	387	25.21
21. Chaused		956	172	1128	54.10
22. Kurrahi		806	180	986	48.86
23. Pawaiya		402	74	476	31.37
24. Oran Rural		241	-75	166	10.49
25. Singhpur		960	110	1070	75.40
Total Block Bisanda		4048	508	4556	30.69
26. Baberu T.A.		705	371	1076	41.72
27. Bisanda T.A.		-	-	-	-
28. Oran T.A.		-	-	-	-
Total Tahsil Baberu		21965	3959	25924	57.51

Source : Computed from the data collected from the state census Office, U.P., Lucknow.

APPENDIX IV-1

Details of Credit Programme (Rs. in Lakhs) in 1983-85.

Sl No	Sector and scheme activity	Block Kamasin							
		Allahabad Bank		Tulsi Gramin Bank		Land Develop- Bank		Distt. Co-operative Bank	
		No. of beneficiaries	Total credit provided	No. of beneficiaries	Total credit provided	No. of beneficiaries	Total credit provided	No. of beneficiaries	Total credit provided
1	2	3	4	5	6	7	8	9	10
1. Agriculture :		304	15.87	300	5.50	372	27.07	2554	25.38
1. Crop Loan		50	0.50	50	0.50	-	-	2500	25.00
11. Irrigation		174	12.30	90	3.60	317	20.69	5	0.25
a. Dug wells		60	2.40	70	2.80	135	5.40	-	-
b. Tube wells Shallow		60	6.00	-	-	93	9.30	-	-
Tube wells Deep		4	1.00	-	-	6	1.50	-	-
c. Instalation of electric pump sets & oil engine		40	2.40	-	-	60	3.60	-	-
d. Energistation of pump sets		10	0.50	10	0.50	10	0.50	-	-
e. Other Boring		-	-	10	0.30	13	0.39	-	-
f. Bore wells									
111. Farm Equipment		60	2.67	88	0.53	43	6.20	23	0.05
a. Tractors		3	1.50	-	-	10	5.00	-	-
b. Power Threshers		30	0.45	10	0.15	30	0.45	-	-
c. Power Tillers		-	-	-	-	3	0.75	-	-
d. Cart including Tyre carts		6	0.18	8	0.24	-	-	-	-
e. Other farm machinery (Ag. & plant protection Equipment)		20	0.04	70	0.14	-	-	23	0.05
iv. Plough animals (Bullocks/Camels etc.)		20	0.04	30	0.60	-	-	-	-

Sl No	Sector and scheme activity	Block Bisanda							
		Allahabad Bank		Tulsi Gramin Bank		Land Develop Bank		Distt. Co-operative Bank	
		No. of beneficiaries	Total credit provided	No. of beneficiaries	Total credit provided	No. of beneficiaries	Total credit provided	No. of beneficiaries	Total credit provided
1	2	11	12	13	14	15	16	17	18
1.	Agriculture	554	25.79	179	2.62	420	29.00	2530	25.09
	i. Crop loan	125	1.25	10	0.10	-	-	2500	25.00
	ii. Irrigation	238	15.14	34	1.46	345	22.20	-	-
	a. Dug Wells	100	4.00	24	0.96	150	6.00	-	-
	b. Tube wells shallow	60	6.00	-	-	100	10.00	-	-
	Tube wells deep	5	1.25	-	-	5	1.25	-	-
	c. Instalation of Electric pump sets & oil engine	50	3.00	-	-	65	3.90	-	-
	d. Energisation of pump sets	10	0.50	10	0.50	15	0.75	-	-
	e. Other Boring	13	0.39	-	-	10	0.30	-	-
	f. Bore wells								
	iii. Farm Equipment	115	8.61	35	0.57	62	6.60	-	-
	a. Tractors	12	6.00	-	-	12	6.00	-	-
	b. Power threshers	40	0.60	20	0.30	40	0.60	-	-
	c. Power tillers	3	0.75	-	-	-	-	-	-
	d. Cart including Type carts	5	0.15	5	0.15	-	-	-	-
	e. Other farm machinery (Ag. & plant protection equipment)	53	0.11	60	0.12	-	-	-	-
	iv. Plough animals (Bullocks/Camels etc.)	26	0.52	20	0.40	-	-	-	-

LXXXIV

1	2	3	4	5	6	7	8	9	10
a.Plantation and Horticulture	-	-	12	0.18	12	0.18	-	-	-
b.Other including nurseries	-	-	12	0.18	12	0.18	26	0.28	0.28
v.Godowns & storage Bins	-	-	30	0.09	-	-	26	0.08	0.08
Forestry Development	-	-	-	-	-	-	-	-	-
Activities	-	-	-	-	-	-	-	-	-
2.Allied to Agriculture	111	3.52	119	3.22	64	1.91	50	1.25	1.25
i. Dairy	50	1.25	67	1.67	50	1.25	10	0.25	0.25
ii.Poultry	11	0.33	11	0.33	-	-	-	-	-
iii.Inland Fisheries	12	0.84	-	-	-	-	-	-	-
iv. Goatery	15	0.18	15	0.18	-	-	-	-	-
v. Shuprearing	7	0.28	9	0.32	9	0.32	-	-	-
vi.Piggery	11	0.44	11	0.44	-	-	-	-	-
vii.Gobar Gas Plant	5	0.20	7	0.28	6	0.24	-	-	-
3.Rural & Cottage Industry	91	0.71	138	1.07	-	-	12	0.13	0.13
i.Handlooms	6	0.18	10	0.30	-	-	3	0.09	0.09
ii.Village oil ghani	4	0.12	5	0.15	-	-	-	-	-
iii.Leather workers	10	0.10	20	0.20	-	-	4	0.04	0.04
iv.House hold food processing units	-	-	6	-	-	-	-	-	-
v. Bamboo workers	10	-	15	-	-	-	-	-	-
vi.Carpet making	7	0.07	7	0.07	-	-	-	-	-
vii.Wood workers	10	0.10	15	0.15	-	-	-	-	-
viii.Village pottery	10	-	10	-	-	-	5	-	-

LXXXVI

1	2	19	20	21	22	23	24	25	26
	a-Plantation and Horticulture	39	0.59	-	-	39	0.59	-	-
	b-Other including nurseries	39	0.59	-	-	39	0.59	-	-
	v.Gedowns & Storage Bins	15	0.05	40	0.12	-	-	10	0.03
	Forestry Development	-	-	-	-	-	-	-	-
2.	Activities Allied to Agriculture	119	3.67	172	4.55	73	2.02	90	2.21
	i. Dairy	66	1.65	100	2.50	60	1.50	72	1.80
	ii. Poultry	7	0.21	13	0.39	-	-	3	0.09
	iii. Inland Fisheries	13	0.91	-	-	-	-	-	-
	iv. Goatery	15	0.18	25	0.30	-	-	10	0.12
	v. Shiprearing	5	0.20	10	0.40	8	0.32	-	2
	vi. Piggery	8	0.32	16	0.64	-	-	5	0.20
	vii. Gobar Gas plant	5	0.20	8	0.32	5	0.20	-	-
3.	Rural & Cottage Industry	93	0.75	205	1.59	-	-	15	0.15
	i. Handlooms	5	0.15	7	0.21	-	-	5	0.15
	ii. Village oil ghani	5	0.15	12	0.36	-	-	-	-
	iii. Leather workers	10	0.10	40	0.40	-	-	-	-
	iv. House hold food processing units	7	-	-	-	-	-	-	-
	v. Bamboo workers	5	-	20	-	-	-	-	-
	vi. Carpet making	5	0.05	14	0.14	-	-	-	-
	vii. Wood workers	20	0.20	20	0.20	-	-	-	-
	viii. Village pottery	10	-	20	-	-	-	10	-

LXXXVII

1	2	3	4	5	6	7	8	9	10
	Others :	21	0.54	31	0.15	-	-	-	-
	a-Carpentry	9	0.08	12	0.12	-	-	-	-
	b-Black smithy	6	0.06	8	0.08	-	-	-	-
	c-Ready made garments	8	-	12	-	-	-	-	-
	d-Basket making	6	-	10	-	-	-	-	-
	e-Tat patti	6	-	8	-	-	-	-	-
	f-Soap making	9	0.09	15	0.15	-	-	-	-
	g-Ban making	9	-	16	2	-	-	-	-
	h-Food processing units	-	-	-	-	-	-	-	-
	i-Oil Extraction units	3	0.45	-	-	-	-	-	-
	j-Engineering units	-	-	-	-	-	-	-	-
4.	Transport operators :	21	0.43	28	0.53	-	-	-	-
	i. Cycle Rickshaws	7	0.11	7	0.10	-	-	-	-
	ii.Mules etc.	5	0.15	6	0.18	-	-	-	-
	iii.Horse & Tanga	4	0.12	5	0.15	-	-	-	-
	iv. Hand carts	5	0.05	10	0.10	-	-	-	-
5.	Retail Traders & small business man	22	0.05	37	0.10	-	-	-	-
	i.Cloth making	6	-	12	-	-	-	-	-
	ii.Bangles shop	4	-	5	-	-	-	-	-
	iii.Dry cleaning shop	5	0.05	10	0.10	-	-	-	-
	iv. Tea stall	5	0.05	8	0.08	-	-	-	-
	v. Parchoon shop	5	-	9	-	-	-	-	-
	vi. General Merchant	10	-	16	-	-	-	-	-

LXXXVIII

1	2	11	12	13	14	15	16	17	18
	Others :	31	1.75	-	-	-	-	-	-
	a-Carpentry	12	0.12	10	0.10	-	-	-	-
	b-Black smithy	13	0.13	7	0.07	-	-	-	-
	c-Ready made garments	12	-	10	-	-	-	-	-
	d-Basket making	10	-	10	-	-	-	-	-
	e-Tat patti	7	-	7	-	-	-	-	-
	f-Soap making	10	0.10	8	0.03	-	-	-	-
	g-Ban making	12	-	10	-	-	-	-	-
	h-Food processing units	3	0.90	-	-	-	-	-	-
	i-Oil extraction units	3	0.45	-	-	-	-	-	-
	j-Engineering units	3	0.30	-	-	-	-	-	-
4.	Transport operators	46	0.75	34	0.57	-	-	-	-
	i. Cycle Rickshaws	15	0.22	10	0.15	-	-	-	-
	ii. Mules etc.	6	0.13	5	0.15	-	-	-	-
	iii. Horse & Tanga	5	0.15	4	0.12	-	-	-	-
	iv. Hand carts	20	0.20	15	0.15	-	-	-	-
5.	Retail Traders & small business man	32	0.07	27	0.06	-	-	-	-
	i. Cloth making	10	-	8	-	-	-	-	-
	ii. Bangles shop	5	-	5	-	-	-	-	-
	iii. Dry cleaning shop	7	0.07	6	0.06	-	-	-	-
	iv. Tea stall	7	0.07	7	0.07	-	-	-	-
	v. Parchoon shop	7	-	6	-	-	-	-	-
	vi. General merchant	13	-	13	-	-	-	-	-

LXXXIX

1	2	19	20	21	22	23	24	25	26
	Others :	-	-	-	-	-	-	-	-
	a-Carpentry	5	0.05	14	0.14	-	-	-	-
	b-Black smithy	5	0.05	14	0.14	-	-	-	-
	c-Ready made garments	10	-	20	-	-	-	-	-
	d-Basket making	3	-	12	-	-	-	-	-
	e-Tat patti	3	-	12	-	-	-	-	-
	f-Soap making	4	0.04	16	0.16	-	-	-	-
	g-Ban making	3	-	12	-	-	-	-	-
	h-Food processing units	6	1.80	-	-	-	-	-	-
	i-Oil extraction units	6	0.90	-	-	-	-	-	-
	j-Engineering units	3	0.30	-	-	-	-	-	-
4.	Transport operators :	25	0.40	63	1.12	-	-	10	0.10
	i. Cycle Rickshaws	10	0.15	25	0.38	-	-	-	-
	ii. Mules etc.	2	0.06	8	0.24	-	-	-	-
	iii. Horse & Tanga	3	0.09	10	0.30	-	-	-	-
	iv. Hand carts	10	0.10	20	0.20	-	-	10	0.10
5.	Retail Traders & small business man	18	0.05	40	0.10	-	-	-	-
	i. Cloth making	5	-	10	-	-	-	-	-
	ii. Bangles shop	2	-	6	-	-	-	-	-
	iii. Dry cleaning shop	5	0.05	10	0.10	-	-	-	-
	iv. Tea stall	3	0.03	12	0.12	-	-	-	-
	v. Parchoon shop	6	-	14	-	-	-	-	-
	vi. General merchant	10	-	20	-	-	-	-	-

LXXXX

1	2	3	4	5	6	7	8	9	10
6. Professional & self employed		51	0.58	78	0.83	-	-	-	-
i. Shoe repair- ing units		10	-	15	-	-	-	-	-
ii. Tailoring units -		10	0.20	20	0.40	-	-	-	-
iii. Barber shop -		5	0.15	5	0.15	-	-	-	-
iv. Cycle Repairing -		5	-	8	-	-	-	-	-
v. Radio Repairing		3	-	6	-	-	-	-	-
vi. Watch Repairing		5	-	8	-	-	-	-	-
vii. Type works		5	0.15	6	0.18	-	-	-	-
viii. Boring works		8	0.08	10	0.10	-	-	-	-

1498	57.56	1663	27.19	1244	84.83	5215	52.57
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LCI									
1	2	11	12	13	14	15	16	17	18
6. Professional & self employed		96	0.73	62	0.55	-	-	-	-
i. Shoe Repairing units -		30	-	19	-	-	-	-	-
ii. Tailoring units -		15	0.30	10	0.20	-	-	-	-
iii. Barber shop-		5	0.15	4	0.12	-	-	-	-
iv. Cycle Repairing		7	-	7	-	-	-	-	-
v. Radio Repairing		5	-	5	- 2	-	-	-	-
vi. Watch Repairing		8	-	5	-	-	-	-	-
vii. Type works		6	0.18	5	0.15	-	-	-	-
viii. Boring works		10	0.10	8	0.08	-	-	-	-
		2473	93.52	1053	14.96	1379	99.46	5312	56.08

LCII

1	2	19	20	21	22	23	24	25	26
6. Professional & self employed		44	0.46	109	1.15	-	-	10	0.20
i. Shoe Repairing units -		10	-	20	-	-	-	-	-
ii. Tailoring units-		10	0.02	20	0.40	-	-	10	0.20
iii. Barber shop -		3	0.09	9	0.24	-	-	-	-
iv. Cycle Repairing		6	-	14	-	-	-	-	-
iv. Radio Repairing		3	-	9	-	-	-	-	-
vi. Watch Repairing		3	-	12	-	-	-	-	-
vii. Type works		4	0.12	12	0.36	-	-	-	-
viii. Boring works		5	0.03	15	0.15	-	-	-	-
		1932	76.73	2537	40.71	1247	99.30	5305	56.53

Source : Credit plan of Banda District, Uttar Pradesh, 1983-85.

LCIII
APPENDIX- IV-2
Details of Credit Programme (Rs. in Lakhs) in 1993.

Sl No	Sector and Scheme activity	Block Kamasin							
		Allahabad Bank		Tulsi Gramin Bank		Land Development Bank		Distt. Co-operative Bank	
		No. of beneficiaries	Total Credit provided	No. of beneficiaries	Total Credit provided	No. of beneficiaries	Total Credit provided	No. of beneficiaries	Total Credit provided
1	2	3	4	5	6	7	8	9	10
1. Agriculture :		87	2.82	235	3.05	62	2.67	189	1.53
i. Crop loan		10	0.10	50	0.50	-	-	140	1.40
ii. Irrigation		31	2.10	35	1.30	50	2.49	-	-
a. Dug wells		10	0.40	25	1.00	10	0.40	-	-
b. Tube wells shallow		11	1.10	-	-	2	0.20	-	-
c. Tube wells Deep									
c. Instalation of electric pump sets & oil engine		10	0.60	-	-	25	1.50	-	-
d. Energista-tion of pump sets		-	-	-	-	-	-	-	-
e. Other Boring		-	-	10	0.30	13	0.39	-	-
f. Bore wells									
iii. Farm equip-ment		26	0.22	78	0.38	-	-	23	0.05
a. Tractors		-	-	-	-	-	-	-	-
b. Power threshers		-	-	-	-	-	-	-	-
c. Power Tillers		-	-	-	-	-	-	-	-
d. Cart includ-ing tyre carts		6	0.18	9	0.24	-	-	-	-
e. Other farm machinery Ag. & plant pro-tection equipment		20	0.04	70	0.14	-	-	23	0.05
iv. Plough Animals buttock, camels etc.		20	0.04	30	0.60	-	-	-	-

LCIV

Sl. No.	Sector and scheme activity	Block Bisanda							
		Allahabad Bank		Tulsi Gramin Bank		Land Development Bank		Distt. Co-operative Bank	
		No. of beneficiaries	Total credit provided	No. of beneficiaries	Total credit provided	No. of beneficiaries	Total credit provided	No. of beneficiaries	Total credit provided
1	2	11	12	13	14	15	16	17	18
1. Agriculture :		208	5.25	139	1.79	60	2.88	171	1.57
i. Crop loan		30	0.30	10	0.40	-	-	151	1.51
ii. Irrigation		68	3.97	24	0.96	47	2.68	-	-
a. Dug wells		12	0.48	24	0.96	12	0.48	-	-
b. Tube wells shallow		13	1.30	-	-	10	1.00	-	-
Tube wells deep									
c. Instalation of electric pump sets & oil engine		30	1.90	-	-	15	0.90	-	-
d. Energistation of pump sets		-	-	-	-	-	-	-	-
e. Other Boring		13	0.39	-	-	10	0.30	-	-
f. Bore wells									
iii. Farm equipment		58	0.26	65	0.27	-	-	-	-
a. Tractors		-	-	-	-	-	-	-	-
b. Power Threshers		-	-	-	-	13	0.20	-	-
c. Power Tillers		-	-	-	-	-	-	-	-
d. Cart including Tyre carts		5	0.15	5	0.15	-	-	-	-
e. Other farm machinery Ag. & plant protection equipment		53	0.11	60	0.12	-	-	-	-
iv. Plough animals buttock, camels etc.		26	0.52	20	0.40	-	-	-	-

LCV

Sl. No.	Sector and scheme activity	Block Baberu							
		Allahabad Bank		Tulsi Gramin Bank		Land Development Bank		Distt. Co-operative Bank	
		No. of beneficiaries	Total credit provided	No. of beneficiaries	Total credit provided	No. of beneficiaries	Total credit provided	No. of beneficiaries	Total credit provided
1	2	19	20	21	22	23	24	25	26
1. Agriculture :		98	1.46	223	4.05	70	2.87	70	0.73
i. Crop loan		10	0.10	40	0.40	-	-	50	0.50
ii. Irrigation		18	0.77	56	2.08	31	2.28	-	-
a-Dug wells		5	0.20	40	1.60	7	0.28	-	-
b-Tube wells shallow		-	-	-	-	14	1.40	-	-
Tube wells deep									
c-Installation of electric pump sets & oil engine		6	0.36	-	-	10	0.60	-	-
d-Energisation of pump sets		-	-	-	-	-	-	-	-
e-Other Boring		7	0.21	16	0.48	-	-	-	-
f-Bore wells									
iii. Farm equipment		42	0.20	27	0.25	-	-	-	-
a. Tractors		-	-	-	-	-	-	-	-
b. Power Threshers		-	-	-	-	-	-	-	-
c. Power Tillers		-	-	-	-	-	-	-	-
d. Cart including Tyre carts		4	0.12	7	0.21	-	-	-	-
e. Other farm machinery Ag. & plant protection equipment.		38	0.08	20	0.04	-	-	-	-
iv. Plough animals buttock, camels etc.		18	0.36	60	1.20	-	-	10	0.20

LCVI

1	2	3	4	5	6	7	8	9	10
	a-Plantation & Horticulture	-	-	12	0.13	12	0.13	-	-
	b-Other including nurseries	-	-	12	0.13	12	0.13	-	-
	v.Godowns & storage bins	-	-	30	0.09	-	-	26	0.03
	forestry develop-ment	-	-	-	-	-	-	-	-
2.	Activities Allied to agriculture	106	3.32	115	3.06	60	1.65	50	1.25
	i. Dairy	50	1.25	67	1.60	50	1.25	10	0.25
	ii. Poultry	11	0.33	11	0.33	-	-	-	-
	iii. Inland fisheries	12	0.34	-	-	-	-	-	-
	iv. Goatery	15	0.13	15	0.13	-	-	-	-
	v. Sheep rearing	7	0.23	8	0.32	8	0.32	-	-
	vi. Piggery	11	0.44	11	0.44	-	-	-	-
	vii. Gobar Gas plant	-	-	3	0.12	2	0.03	-	-
3.	Rural & Cottage Industry	58	0.51	95	0.37	-	-	8	0.13
	i. Handlooms	5	0.15	10	0.30	-	-	3	0.09
	ii. Village oil gani	4	0.12	5	0.15	-	-	-	-
	iii. Leather workers	3	0.03	15	0.15	-	-	4	0.04
	iv. House Hold food processing units	-	-	-	-	-	-	-	-
	v. Bamboo workers	-	-	-	-	-	-	-	-
	vi. Carpet making	7	0.07	7	0.07	-	-	-	-
	vii. Wood workers	-	-	-	-	-	-	-	-
	Others	13	0.09	31	0.15	-	-	-	-
	a. Carpentry	8	0.03	12	0.12	-	-	-	-
	b. Blacksmithy	6	0.06	3	0.03	-	-	-	-
	c. Ready made garments	3	-	12	-	-	-	-	-
	d. Basket making	6	-	10	-	-	-	-	-
	e. Tat Patti	6	-	3	-	-	-	-	-
	f. Soap making	9	0.09	15	0.15	-	-	-	-
	g. Ban making	9	-	-	-	-	-	-	-
	h. Food processing units	-	-	-	-	-	-	-	-
	i. food processing units	-	-	-	-	-	-	-	-
	j. Engineering units	-	-	-	-	-	-	-	-

LCVIII

1	2	19	20	21	22	23	24	25	26
a-Plantation & Horticulture		-	-			39	0.59	-	-
b-Other including nurseries		-	-			39	0.59	-	-
v.Godowns & Storage Bins	10	0.03	40	0.12	-	-	-	10	0.03
forestry develop-ment	-	-			-	-	-	-	-
2.Activities Allied to Agriculture	106	3.13	164	4.23	68	1.82		90	2.21
i. Dairy	60	1.50	100	2.50	60	1.50		72	1.80
ii. Poultry	7	0.21	13	0.39	-	-		3	0.09
iii.Inland fisheries	11	0.77			-	-		-	-
iv. Goatery	15	0.18	25	0.30	-	-		10	0.12
v. Sheep rearing	5	0.20	10	0.40	5	0.32		-	-
vi. Piggery	8	0.32	16	0.64	-	-		5	0.20
vii.Gobar gas plant	-	-			-	-		-	-
3.Rural & Cottage Industry	46	0.40	129	1.10	-	-		9	0.15
i. Hand looms	3	0.09	7	0.21	-	-		5	0.15
ii. Village oil gani	2	0.06	9	0.27	-	-		-	-
iii.Leather workers	10	0.10	20	0.20	-	-		-	-
iv. House hold food processing units	-	-			-	-		-	-
v. Bamboo workers	-	-			-	-		-	-
vi. Carpet making	5	0.05	14	0.14	-	-		-	-
vii.Wood workers	-	-			-	-		-	-
viii.Village pattery	-	-	7	0.09	-	-		4	-
Others	-	-			-	-		-	-
a. Carpentry	5	0.05	14	0.14	-	-		-	-
b. Black Smithy	5	0.05	14	0.14	-	-		-	-
c. Readymade garments	10	-	20	0.30	-	-		-	-
d. Basket making	3	-	12	0.18	-	-		-	-
e. Tat Patti	3	-	12	0.18	-	-		-	-
f. Soap Making	-	-	16	0.16	-	-		-	-
g. Soap making	3	-	12	0.21	-	-		-	-
h. food processing units	-	-			-	-		-	-
i. Oil Extraction units	-	-			-	-		-	-
j. Engineering units	-	-			-	-		-	-

LCIX

1	2	3	4	5	6	7	8	9	10
4. Transport operators	16	0.38	18	0.43	-	-	-	-	-
i. Cycle Rickshaws	7	0.11	7	0.10	-	-	-	-	-
ii. Mules etc.	5	0.15	6	0.18	-	-	-	-	-
iii. Horse & Tanga	4	0.12	5	0.15	-	-	-	-	-
iv. Hand carts	-	-	-	-	-	-	-	-	-
5. Retail Traders & Small Businessman	22	0.05	37	0.10	-	-	-	-	-
i. Cloth making	6	-	12	-	-	-	-	-	-
ii. Bangles shop	4	-	5	-	-	-	-	-	-
iii. Dry cleaning shop	5	0.05	10	0.10	-	-	-	-	-
Betel shop									
iv. Tea Stall	5	0.05	8	0.08	-	-	-	-	-
v. Parchoon shop	5	-	9	-	-	-	-	-	-
vi. General merchant	10	-	16	-	-	-	-	-	-
6. Professional & self employed	39	0.54	53	0.63	-	-	-	-	-
i. Shoe repairing units	-	-	-	-	-	-	-	-	-
ii. Tailoring units	8	0.16	10	0.20	-	-	-	-	-
iii. Barber shop	5	0.15	5	0.15	-	-	-	-	-
iv. Cycle Repairing	5	-	8	-	-	-	-	-	-
v. Radio Repairing	3	-	6	-	-	-	-	-	-
vi. Watch repairing	5	-	8	-	-	-	-	-	-
vii. Type works	5	0.15	6	0.18	-	-	-	-	-
viii. Boring works	8	0.08	10	0.10	-	-	-	-	-
		760	17.43	1316	18.52	306	11.31	475	4.87

LCX

1	2	11	12	13	14	15	16	17	18
4. Transport operators		20	0.46	13	0.33	-	-	-	-
i. Cycle Rickshaws		9	0.13	4	0.06	-	-	-	-
ii. Mules etc.		6	0.13	5	0.15	-	-	-	-
iii. Horse & Tanga		5	0.15	4	0.12	-	-	-	-
iv. Hand Carts		-	-	-	-	-	-	-	-
5. Retail traders & small business man		32	0.07	27	0.06	-	-	-	-
i. Cloth making		10	-	3	-	-	-	-	-
ii. Bangles kshop		5	-	5	-	-	-	-	-
iii. Dry Cleaning shop		7	0.07	6	0.06	-	-	-	-
Betal shop									
iv. Tea stall		7	0.07	7	0.07	-	-	-	-
v. Parcheon shop		7	-	6	-	-	-	-	-
vi. General metchant		13	-	13	-	-	-	-	-
6. Professional & self employed		51	0.63	42	0.51	-	-	-	-
i. Shoe repairing units		-	-	-	-	-	-	-	-
ii. Nailorrig units		10	0.20	3	0.16	-	-	-	-
iii. Barber shop		5	0.15	4	0.12	-	-	-	-
iv. Cycle repairing		7	-	7	-	-	-	-	-
v. Radio repairing		5	-	5	-	-	-	-	-
vi. Watch repairing		3	-	5	-	-	-	-	-
vii. Type works		6	0.13	5	0.15	-	-	-	-
viii. Boring works		10	0.10	3	0.03	-	-	-	-
		1251	27.15	955	11.66	271	11.06	564	3.64

1	2	19	20	21	22	23	24	25	26
4. Transport operators	5	0.15	37	0.93	-	-	-	-	-
i. Cycle Rickshaws	-	-	19	0.29	-	-	-	-	-
ii. Mules etc.	2	0.06	8	0.24	-	-	-	-	-
iii. Horse & Tanga	3	0.09	10	0.30	-	-	-	-	-
iv. Hand Carts	-	-	-	-	-	-	-	-	-
5. Retail Traders & Small Business man	18	0.05	-	-	-	-	-	-	-
i. Cloth making	5	-	10	-	-	-	-	-	-
iii. Bangles shop	2	-	6	-	-	-	-	-	-
iii. Dry Cleaning shop	5	0.05	10	0.10	-	-	-	-	-
Betal shop	-	-	6	-	-	-	-	-	-
iv. Tea stall	3	0.03	12	0.12	-	-	-	-	-
v. Parchoon shop	6	-	14	-	-	-	-	-	-
vi. General merchant.	10	-	20	-	-	-	-	-	-
6. Professional & self employed	24	0.26	94	1.05	-	-	-	5	0.10
i. Shoe repairing units	-	-	-	-	-	-	-	-	-
ii. Tailoring units	-	-	15	0.30	-	-	-	5	0.10
iii. Barber shop	3	0.09	8	0.24	-	-	-	-	-
iv. Cycle Repairing	6	-	14	-	-	-	-	-	-
v. Radio Repairing	3	-	8	-	-	-	-	-	-
vi. Watch Repairing	3	-	12	0.36	-	-	-	-	-
vii. Type works	4	-	-	-	-	-	-	-	-
viii. Boring works	5	0.05	15	0.15	-	-	-	-	-
<hr/>									
		670	11.88	1451	26.19	346	12.25	348	6.38
<hr/>									

Source : Credit plan of Banda District Uttar Pradesh, 1953.

CI

APPENDIX - IV-3

Details of Credit Programme in 1983-85. (Rs.in Lakhs)

Sl. No.	Name of Bank	BLOCK - Kamasin							
		Agriculture				Activities Allied to agriculture			
		Total credit provided		Credit Pro-vided under I.R.D.P.		Total credit provided		Credit Pro-vided under I.R.D.P.	
		No. of bene- fici- ries	Credit provi- ded	No. of bene- fici- ries	Credit provi- ded	No. of bene- fici- ries	Credit provi- ded	No. of bene- fici- ries	Credit provi- ded
1	2	3	4	5	6	7	8	9	10
1.	Allahabad Bank	304	15.97	97	2.92	111	3.52	106	3.32
2.	Tulsi Gramin Bank	300	5.50	235	3.05	119	3.22	115	3.06
3.	Land Develop- ment Bank	372	27.07	62	2.67	64	1.91	60	1.65
4.	District Co- operative Bank	2554	15.97	199	1.53	50	1.25	50	1.25
Total Block Kamasin		3530	64.31	573	10.07	344	9.90	331	9.29
1.	Allahabad Bank	554	25.79	208	5.25	154	4.56	154	4.05
2.	Tulsi Gramin Bank	179	2.62	139	1.79	65	1.93	65	1.93
3.	Land Develop- ment Bank	420	29.00	60	2.99	42	1.23	40	1.15
4.	District Co- operative Bank	2530	25.09	171	1.57	101	2.55	101	2.55
Total Block Bisanda		3683	92.50	578	11.49	362	10.17	340	9.58
Block - Baberu									
1.	Allahabad Bank	435	21.47	98	1.46	119	3.67	106	3.19
2.	Tulsi Gramin Bank	513	9.71	223	4.05	172	4.55	164	4.23
3.	Land Develop- ment Bank	367	28.42	70	2.97	73	2.02	68	1.92
4.	District Co- operative Bank	2525	25.48	70	0.73	90	2.21	90	2.21
Total Block Baberu		3840	84.08	461	9.11	454	12.45	428	11.44
Grand Total Tahsil Baberu		11053	230.99	1612	30.67	1160	32.42	1099	30.30

CII

BLOCK - Kamasin

Sl No.	Name of Bank	Rural & Cottage Industry				Transport operators			
		Total Credit Provided		Credit Provided under I.R.D.P.		Total Credit Provided		Credit Provided under I.R.D.P.	
		No. of beneficiaries	Credit provided	No. of beneficiaries	Credit provided	No. of beneficiaries	Credit provided	No. of beneficiaries	Credit provided
1	2	11	12	13	14	15	16	17	18
1.	Allahabad Bank	91	0.71	57	0.51	21	0.43	16	0.38
2.	Tulsi Gramin Bank	138	1.07	95	0.87	28	0.53	18	0.43
3.	Land Development Bank	N11	N11	N11	N11	N11	N11	N11	N11
4.	District Co-operative Bank	12	0.13	7	0.13	N11	N11	N11	N11
Total Block Kamasin		241	1.91	159	1.51	49	0.96	34	0.81
BLOCK - Bisanda									
1.	Allahabad Bank	152	1.58	82	0.79	46	0.75	20	0.46
2.	Tulsi Gramin Bank	82	0.71	79	0.62	34	0.57	13	0.33
3.	Land Development Bank	N11	N11	N11	N11	N11	N11	N11	N11
4.	District Co-operative Bank	25	0.40	10	0.20	N11	N11	N11	N11
Total Block Bisanda		259	2.69	171	1.61	80	1.32	33	0.79
BLOCK - Baberu									
1.	Allahabad Bank	93	0.75	46	0.40	25	0.40	5	0.15
2.	Tulsi Gramin Bank	205	1.59	129	1.10	63	1.12	37	0.93
3.	Land Development Bank	N11	N11	N11	N11	N11	N11	N11	N11
4.	District Co-operative Bank	15	0.15	9	0.15	10	0.10	N11	N11
Total Block Baberu		313	2.49	184	1.65	98	1.62	42	0.98
Total Tahsil Baberu		813	7.09		4.77	227	3.90	109	2.58

BLOCK -Kamasin

Sl No	Name of Bank	Retail Traders & small business man				Professional and self employed			
		Total Credit provided		Credit Pro-vided under I.R.D.P.		Total Credit provided		Credit Pro-vided under I.R.D.P.	
		No. of bene- fec- ries	Credit provi- ded	No. of bene- fec- ries	Credit provi- ded	No. of bene- fec- ries	Credit provi- ded	No. of bene- fec- riss	Credit provi- ded
1	2	19	20	21	22	23	24	25	26
1.	Allahabad Bank	22	0.05	22	0.05	51	0.58	39	0.54
2.	Tulsi Gramin Bank	37 33	0.10 0.08	37 33	0.10 0.08	78	0.83	53	0.63
3.	Land Develop- ment Bank	N11	N11	N11	N11	N11	N11	N11	N11
4.	District Co- operative Bank	N11	N11	N11	N11	N11	N11	N11	N11
Total Block Kamasin		92	0.23	92	0.23	129	1.41	92	1.17
BLOCK - Bisanda									
1.	Allahabad Bank	32 27	0.07 0.07	32 27	0.07 0.07	96	0.73	51	0.63
2.	Tulsi Gramin Bank	27 26	0.06 0.07	27 26	0.06 0.07	62	0.55	42	0.51
3.	Land Development Bank	N11	N11	N11	N11	N11	N11	N11	N11
4.	District Co- operative Bank	N11	N11	N11	N11	N11	N11	N11	N11
Total Block Bisanda		112	0.27	112	0.27	148	1.28	42	1.14
BLOCK- Baberu									
1.	Allahabad Bank	18 19	0.05 0.03	18 19	0.05 0.03	44	0.46	24	0.26
2.	Tulsi Gramin Bank	40 46	0.10 0.12	40 46	0.10 0.12	109	1.15	94	1.05
3.	Land Development Bank	N11	N11	N11	N11	N11	N11	N11	N11
4.	District Co- operative Bank	N11	N11	N11	N11	10	0.20	5	0.10
Total Block Baberu		123	0.30	123	0.30	153	1.81	113	1.41
Total Tahsil Baberu		327	0.80	327	0.80	430	4.50	247	3.72

CIV
APPENDIX - IV-4
Detailsof Credit programme in 1983 (Rs. in Lakhs)

BLOCK - Kamasin

Sl No	Name of Bank	Agriculture				Activities allied to agriculture			
		Total Credit provided		Credit Pro-vided under I.R.D.P.		Total Credit provided		Credit Pro-vided under I.R.D.P.	
		No.of bene-feci-ries	Credit provi-ded	No.of bene-feci-ries	Credit provi-ded	No.of bene-feci-ries	Credit provi-ded	No.of bene-feci-ries	Credit provi-ded
1	2	3	4	5	6	7	8	9	10
1.	Allahabad Bank	154	7.29	42	1.33	52	1.62	50	1.58
2.	Tulsi Gramin Bank	153	2.63	125	1.57	48	1.29	46	1.21
3.	Land Develop-ment Bank	149	10.48	32	1.44	31	0.88	29	0.80
4.	District Co-operative Bank	1723	17.20	65	0.50	20	0.50	20	0.50
Total Block Kamasin		2179	37.6	264	4.84	151	4.28	145	4.05

BLOCK- Bisanda

1.	Allahabad Bank	292	12.03	83	2.30	66	1.97	57	1.72
2.	Tulsi Gramin Bank	91	1.28	73	0.89	31	0.86	31	0.86
3.	Land Development Bank	234	13.22	26	1.23	21	0.62	20	0.58
4.	District Co-operative Bank	2015	20.05	75	0.68	43	1.09	43	1.09
Total Block Bisanda		2632	46.58	257	5.10	161	4.54	151	4.25

BLOCK -Babaru

1.	Allahabad Bank	219	8.78	43	0.62	43	1.37	40	1.22
2.	Tulsi Gramin Bank	220	3.82	90	1.48	69	1.82	66	1.70
3.	Land Develop-ment Bank	162	12.40	31	1.30	29	0.79	28	0.75
4.	District Co-operative Bank	2011	20.20	44	0.45	44	1.10	44	1.10
Total Baberu Block		2612	45.20	208	3.85	185	5.08	178	4.77
Total Tahsil Baberu		7453	129.38	729	13.79	497	13.90	474	13.07

CV

BLOCK- Kamasin

Sl No	Name of Bank	Rural cottage Industry				Transport operators			
		Total Credit provided		Credit Provided under I.R.D.P.		Total Credit provided		Credit Provided under I.R.D.P.	
		No. of beneficiaries	Credit provided	No. of beneficiaries	Credit provided	No. of beneficiaries	Credit provided	No. of beneficiaries	Credit provided
1	2	11	12	13	14	15	16	17	18
1.	Allahabad Bank	41	0.33	25	0.25	10	0.22	8	0.20
2.	Tulsi Gramin Bank	60	0.44	31	0.35	13	0.24	8	0.19
3.	Land development Bank	N11	N11	N11	N11	N11	N11	N11	N11
4.	District Co-operative Bank	5	0.05	3	0.05	N11	N11	N11	N11
Total Block Kamasin		106	0.82	59	0.65	23	0.46	16	0.39
BLOCK- Bisanda									
1.	Allahabad Bank	72	0.77	38	0.39	23	0.37	9	0.21
2.	Tulsi Gramin Bank	39	0.33	37	0.27	15	0.25	6	0.15
3.	Land Development Bank	N11	N11	N11	N11	N11	N11	N11	N11
4.	District Co-operative Bank	11	0.17	4	0.08	N11	N11	N11	N11
Total Block Bisanda		122	1.27	79	0.74	38	0.62	15	0.36
BLOCK - Baberu									
1.	Allahabad Bank	46	0.34	23	0.18	12	0.19	2	0.06
2.	Tulsi Gramin Bank	98	0.77	63	0.54	28	0.49	16	0.36
3.	Land Development Bank	N11	N11	N11	N11	N11	N11	N11	N11
4.	District Co-operative Bank	7	0.06	4	0.06	5	0.05	N11	N11
Total Baberu Block		151	1.17	90	0.78	45	0.73	18	0.42
Total Tahsil Baberu		379	3.26	228	2.17	106	1.81	49	1.17

CVI

BLOCK - Kamasin

Sl No	Name of Bank	Retail Traders & small business man				Professional and self employed			
		Total Credit provided		Credit Provided under I.R.D.P.		Total Credit provided		Credit Provided under I.R.D.P.	
		No. of beneficiaries	Credit provided	No. of beneficiaries	Credit provided	No. of beneficiaries	Credit provided	No. of beneficiaries	Credit provided
1	2	19	20	21	22	23	24	25	26
1.	Allahabad Bank	9	0.02	9	0.02	22	0.25	15	0.21
		9	0.02	9	0.02				
2.	Tulsi Gramin Bank	19	0.05	19	0.05	37	0.43	25	0.33
		15	0.04	15	0.04				
3.	Land Development Bank	N11	N11	N11	N11	N11	N11	N11	N11
4.	District Co-operative Bank	N11	N11	N11	N11	N11	N11	N11	N11
Total Block Kamasin		52	0.13	52	0.13	59	0.68	40	0.54
BLOCK - Bisanda									
1.	Allahabad Bank	14	0.03	14	0.03	37	0.33	22	0.27
		13	0.04	13	0.04				
2.	Tulsi Gramin Bank	12	0.02	12	0.02	30	0.26	19	0.24
		12	0.04	12	0.02				
3.	Land Development Bank	N11	N11	N11	N11	N11	N11	N11	N11
4.	District Co-operative Bank	N11	N11	N11	N11	N11	N11	N11	N11
Total Block Bisanda		51	0.13	51	0.11	67	0.59	41	0.51
BLOCK- Baberu									
1.	Allahabad Bank	7	0.02	7	0.02	18	0.22	11	0.14
		9	0.02	9	0.02				
2.	Tulsi Gramin Bank	18	0.06	18	0.06	43	0.44	35	0.42
		22	0.06	22	0.06				
3.	Land Development Bank	N11	N11	N11	N11	N11	N11	N11	N11
4.	District Co-operative Bank	N11	N11	N11	N11	5	0.10	2	0.04
Total Block Baberu		56	0.16	56	0.16	66	0.76	48	0.60
Total Tahsil Baberu		159	0.42	159	0.40	192	2.03	129	1.65

Source : Credit Plan of Banda District, Uttar Pradesh, 1983.

CVII
APPENDIX VI-1

Categories of Industrial Units and their Employment, 1994-95.

Sl. No.	Nyaya Panchayat/ T.A.	Agro-based		Mineral based		Forest based		Live stock based		Engin- eering based		Chemical based		Others		Total units	Total workers
		Units	Workers	Units	Workers	Units	Workers	Units	Workers	Units	Workers	Units	Workers	Units	Workers		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1.	Nibhaur	3	7	3	5	3	4	2	4	-	-	-	-	-	-	11	20
2.	Bhabhua	6	8	4	7	5	5	2	3	1	2	-	-	-	-	18	25
3.	Karhuli Muafi	5	8	5	6	4	5	1	2	-	-	-	-	-	-	15	21
4.	Paras	5	7	3	8	3	6	2	2	1	1	-	-	-	-	14	24
5.	Santar	3	6	5	5	2	4	-	-	-	-	-	-	-	-	10	15
6.	Harauli	5	9	4	6	3	6	-	-	-	-	-	-	-	-	12	21
7.	Bagenta	2	6	6	6	4	4	1	1	1	2	-	-	-	-	14	19
8.	Palhari	3	8	4	5	2	3	3	4	3	5	-	-	-	-	14	25
9.	Badagaon	4	10	2	4	2	3	3	3	1	1	-	-	-	-	12	21
10.	Block Baberu	36	69	36	52	28	40	14	19	7	11	-	-	-	-	121	191
10.	Audaha	2	5	3	4	-	8	1	1	-	-	-	-	-	-	10	18
11.	Bira	3	4	5	5	1	1	1	1	-	-	-	-	-	-	10	11
12.	Narainpur	1	2	2	2	2	3	-	-	-	-	-	-	-	-	5	7
13.	Kamasin	6	21	4	10	3	7	4	8	1	2	1	1	2	2	21	51
14.	Sunahuli	2	6	3	4	2	5	2	2	-	-	-	-	-	-	9	17
15.	Parsauli	2	4	4	7	2	5	2	3	-	-	-	-	-	-	10	19
16.	Sanda Sani	3	5	2	4	3	5	2	2	-	-	-	-	-	-	10	16
17.	Chhilolar	1	2	2	2	2	4	1	2	-	-	-	-	-	-	6	10
	Block Kamasin	20	49	25	38	19	38	13	29	1	2	14	1	2	2	81	149

CVIII

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
18.Bhadehdu	2	5	3	4	1	1	1	2	-	-	-	-	-	-	-	7	12
19.Bisanda Rural	5	12	6	5	2	4	2	3	2	2	2	2	2	-	-	19	29
20.Chandrayal	3	9	4	6	-	-	-	-	-	-	-	-	-	-	-	7	15
21.Chausad	2	6	3	5	3	3	2	2	-	-	-	-	-	-	-	11	16
22.Kurrahi	3	8	3	3	1	1	1	1	-	-	-	-	-	-	-	8	13
23.Pawaiya	2	3	5	9	2	2	2	3	-	-	-	-	-	-	-	10	17
24.Oran Rural	4	5	3	3	2	4	2	2	1	1	-	-	-	-	-	12	15
25.Singhpur	3	9	5	11	2	3	-	-	-	-	-	-	-	-	-	10	23
Block Bisanda	24	57	32	46	13	18	10	13	3	3	2	2	-	-	-	94	139
26.Baberu T.A.	10	45	8	32	12	40	5	5	6	8	3	10	3	6	47	156	
27.Bisanda T.A.	6	20	5	10	6	8	4	6	2	3	2	2	2	3	27	52	
28.Oran T.A.	5	10	4	8	3	4	3	4	2	2	1	1	2	3	20	32	
Total Tahsil Baberu	101	250	110	196	31	149	49	76	21	29	9	16	9	14	380	719	

Source : District Industry Centre, Banda.

Where : T.A. = Town Area.

CVIII

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
18. Bhadehdu	2	5	3	4	1	1	1	2	-	-	-	-	-	-	-	7	12
19. Bisanda Rural	5	12	6	5	2	4	2	3	2	2	2	2	2	-	-	19	29
20. Chandrayal	3	9	4	6	-	-	-	-	-	-	-	-	-	-	-	7	15
21. Chausad	2	6	3	5	3	3	2	2	-	-	-	-	-	-	-	11	16
22. Kurrahi	3	8	3	3	1	1	1	1	-	-	-	-	-	-	-	8	13
23. Pawaiya	2	3	5	9	2	2	2	3	-	-	-	-	-	-	-	10	17
24. Oran Rural	4	5	3	3	2	4	2	2	1	1	-	-	-	-	-	12	15
25. Singhpur	3	9	5	11	2	3	-	-	-	-	-	-	-	-	-	10	23
Block Bisanda	24	57	32	46	13	18	10	13	3	3	2	2	-	-	-	84	139
26. Baberu T.A.	10	45	8	32	12	40	5	5	6	8	3	10	3	6	47	156	
27. Bisanda T.A.	6	20	5	10	6	8	4	6	2	3	2	2	2	3	27	52	
28. Oran T.A.	5	10	4	8	3	4	3	4	2	2	1	1	2	3	20	32	
Total Tahsil Baberu	101	250	110	196	31	149	49	76	21	29	9	16	9	14	380	719	

Source : District Industry Centre, Banda.

Where : T.A. = Town Area.

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